

IODP Science Advisory Structure Executive Committee

12th Meeting, 14-15 June 2011

Amsterdam

Science Advisory Structure Executive Committee – SASEC

Shoji Arai	Kanazawa University, Japan
Keir Becker	University of Miami, USA
Se Won Chang (observer)*	Korea Institute of Geoscience and Mineral Resources, Korea
Jan Willem de Leeuw	Royal Netherlands Institute for Sea Research, The Netherlands
Gabe Filippelli (non-voting)	Indiana University-Purdue University Indianapolis, USA
Susan Humphris	Woods Hole Oceanographic Institution, USA
Kenji Kato	Shizuoka University, Japan
Hiroshi Kitazato	Japan Agency for Marine-Earth Science and Technology, Japan
Kozo Takahashi	Kyushu University
Terry Quinn	University of Texas at Austin, USA
Rasik Ravindra* (observer)	National Centre for Antarctic and Ocean Research, India
Maureen Raymo (chair)	Boston University, USA
Jianzhong Shen (observer)	Ministry of Science and Technology (MOST), China
Kiyoshi Suyehiro (non-voting)	IODP Management International, Inc., Japan
Damon Teagle	University of Southampton, UK
Pinxian Wang	Tongji University
Chris Yeats (observer)	Australian Resources Research Centre, CSIRO, Australia

*Unable to attend

Liaisons, Observers and Guests

Wataru Azuma	Center for Deep Earth Exploration (CDEX), JAMSTEC, Japan
Rodey Batiza	National Science Foundation, USA
Gilbert Camoin	ECORD Managing Agency (EMA), France
Bradford Clement	Integrated Ocean Drilling Program, Texas A&M University, USA
David Divins	Consortium for Ocean Leadership, USA
Nobuhisa Eguchi	Center for Deep Earth Exploration (CDEX), JAMSTEC, Japan
Robert Gatliff	British Geological Survey, UK
Shinji Hida	Ministry of Education, Culture, Sports, Science and Technology, Japan
Tom Janecek	National Science Foundation (NSF), USA
Kevin Johnson	IODP Management International, Inc., Japan
Hodaka Kawahata	Japan drilling Earth science consortium, Japan
Shin'ichi Kuramoto	Ministry of Education, Culture, Sports, Science and Technology, Japan
Hans Christian Larsen	IODP Management International, Inc., Japan
Catherine Mével	ECORD Managing Agency (EMA), France
Noriko Olson	IODP Management International, Inc., USA
William Ridley	National Science Foundation (NSF), USA
Jeff Schuffert	U.S. Science Support Program, Consortium for Ocean Leadership, USA
Shingo Shibata	Ministry of Education, Culture, Sports, Science and Technology, Japan
Michiko Yamamoto	IODP Management International, Inc., Japan

Science Advisory Structure Executive Committee

12th Meeting, 14-15 June 2011

Amsterdam

Executive Summary (ver. 1.1)

Tuesday	14 June 2011	09:00-17:30
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1. Introduction

1.5. Approve meeting agenda

SASEC motion 1106-01: SASEC approves the agenda for its 12th meeting on 14-15 June in Amsterdam, the Netherlands.

Humphris moved, Quinn seconded; 10 in favor (Arai, Becker, de Leeuw, Humphris, Kato, Kitazato, Takahashi, Quinn, Raymo, Teagle); 2 non-voting (Filippelli, Suyehiro)

1.6. Approve last meeting minutes

SASEC Motion 1106-02: SASEC approves the minutes of its 11th meeting on 18-19 January 2011 in Miami, USA.

Quinn moved, Humphris seconded; 10 in favor (Arai, Becker, de Leeuw, Humphris, Kato, Kitazato, Takahashi, Quinn, Raymo, Teagle); 2 non-voting (Filippelli, Suyehiro)

2. SPC report

SASEC Action Item 1106-03: SASEC will review, advise, and/or approve SPC recommendations for final MSP expeditions.

3. Annual program plan

SASEC Action Item 1106-04: SASEC will review FY12 APP provided by IODP-MI to SASEC in early July. Budget subcommittee will provide summary and recommendation to SASEC soon afterward. SASEC will then forward its recommendation to BOG in a timely manner.

4. End of Program planning: Budget and Tohoku EQ impacts

4.2 Rapid Response Drilling DPG Report

SASEC Consensus 1106-05: The Tohoku mega-earthquake was a major tragedy of national and international importance. The rupture is the best geophysically imaged major seismic event ever.

SASEC thanks the Detailed Planning Group for its excellent report on the potential for a rapid response following the Tohoku earthquake, and is excited that this group has initiated discussion of the scientific opportunities and technological challenges. In recognition of the immense significance and impact of this mega-earthquake, and of IODP's potential capability to address key parameters and processes that can only be determined immediately after the event, SASEC invites a drilling proposal to be submitted by 1 August 2011.

The scientific program of the proposal should be carefully developed and tightly integrated with the necessary technological capabilities. The proponents must convincingly articulate how samples and data recovered will address the science objectives proposed. The proposal should provide options for measurements of ephemeral properties as they relate to various scheduling options.

SASEC also requests that CDEX, in cooperation with the drilling proponents, initiate an assessment of the technological feasibility of the proposed drilling program.

SASEC plans to review all information and consider approval for scheduling before it is disbanded at the end of September 2011.

SASEC Action Item 1106-06: SASEC will review SPC recommendations for a RRD expedition to Tohoku earthquake zone, and consider the issues concerning technological capability and achievement of Nantroseize objectives in time remaining, as well as implications for FY12 APP.

5. Scoping of mantle drilling in new program - update

SASEC Consensus 1106-07: SASEC commends IODP-MI for pursuing external funding to scope mantle drilling. Pending a favorable Sloan Foundation co-funding decision and in-kind contributions from JAMSTEC, the possibility of establishing a scoping office will be evaluated within the context of the FY12 APP by the SASEC.

6. Program renewal update

6.1. Status of science plan

SASEC Consensus 1106-08: SASEC received the freshly printed copies of the New Science Plan during its meeting in Amsterdam and wishes to thank Ellen Kappel, who in final editing transformed excellent science into an outstanding printed document.

6.2. Revised proposal submission guidelines

SASEC Consensus 1106-09: SASEC approves the draft IODP Proposal Primer as a resource guide, pending final minor editorial revision by the sub-committee, disbands the sub-committee after these edits are completed, and asks that the primer be added to the proposal submission website.

6.3. Call for proposals for new program

SASEC Action Item 1106-10: SASEC will review a new version of IODP proposal primer, heeding consistency with the call for proposals.

8. Status of establishment of new SAS structure

8.1. Any revisions to beta SAS Terms of Reference

SASEC Consensus 1106-11: SASEC recommends to IWG+ that the SIPCOM chair also be a member of OTF within the new SAS structure and that the TORs be modified accordingly.

Wednesday	15 June 2011	08:30-17:15
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9. Engineering Development/transfer within new program

SASEC Consensus 1106-12: SASEC thanks the Engineering Advice Subcommittee for its thoughtful assessment of models for engineering advice for the post-2013 IODP. SASEC endorses IO-based task forces for engineering advice for each platform, and recommends that there be close coordination amongst task forces. After much deliberation, SASEC concludes that an Engineering Advisory Group should not be created as part of the Science Advisory Structure at this time. SASEC encourages SIPCom to evaluate the efficiency and productivity of the IO-based taskforce arrangement for programmatic engineering advice and to reconsider the recommendations of this subcommittee in the future, as needed.

10. Workshops in FY2011-12: Budget and Process

SASEC Consensus 1106-13: SASEC declines to recommend funding of GOLD workshop proposal.

SASEC Motion 1106-14: SASEC recommends that the Beaufort Sea Workshop proposal be funded at the requested amount.

Quinn moved, Teagle seconded; 10 in favor (Arai, Becker, de Leeuw, Humphris, Kato, Kitazato, Takahashi, Quinn, Raymo, Teagle); 2 non-voting (Filippelli, Suyehiro)

19. Review of any additional action items, motions, and consensus statements

SASEC Consensus 1106-15: SASEC would like to thank Prof. Jan de Leeuw for his wonderful hospitality in the lovely city of Amsterdam. Despite the abundant temptations of the city, museums, historic buildings, and scenic canals (dot, dot, dot), we remained focused on the task at hand, knowing we would be rewarded with a fabulous dinner cruise. We take inspiration from the motto of the Academy builders and adopt our own motto "Progress through austerity"

Science Advisory Structure Executive Committee

12th Meeting, 14-15 June 2011

Amsterdam

Draft Meeting Minutes (ver. 1.1)

Tuesday	14 June 2011	09:00-17:30
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1. Introduction

1.1. Call to order and opening remarks

The Science Advisory Structure Executive Committee (SASEC) chair Maureen Raymo called the meeting to order at 09:00 and welcomed everyone to the meeting.

1.2. Introduction of participants

Maureen Raymo asked all meeting participants to introduce themselves. Each participant introduced himself/herself.

1.3. Welcome and meeting logistics

Local meeting host Jan de Leeuw welcomed everyone to Amsterdam and gave some basic logistical information for the meeting.

1.4. Rules of engagement (Robert's rules, COI policy, etc.)

Raymo went over some salient points of Robert's Rules of Order, including that members should take turns speaking, no member should speak twice until everyone has had a chance to speak, each person should raise his/her hand before speaking, members should not speak in the background, and everyone should speak slowly and clearly.

She asked the SASEC members to declare their conflict of interest.

Name	Declaration
Raymo	595-Full4 Indus Fan and Murray Ridge
Teagle	522-Full5
	769-APL2 Costa Rica Crustal Architecture
	772-APL2 North Atlantic Crustal Architecture

Becker	769-APL2 Costa Rica Crustal Architecture
	772-APL2 North Atlantic Crustal Architecture
Takahashi	477-Full4 Okhotsk/Bering Plio-Pleistocene

1.5. Approve meeting agenda

Raymo asked if there were any suggested changes to the meeting agenda. There were no changes, and the agenda was approved by consensus.

SASEC motion 1106-01: SASEC approves the agenda for its 12th meeting on 14-15 June in Amsterdam, the Netherlands.

Humphris moved, Quinn seconded; 10 in favor (Arai, Becker, de Leeuw, Humphris, Kato, Kitazato, Takahashi, Quinn, Raymo, Teagle); 2 non-voting (Filippelli, Suyehiro)

1.6. Approve last meeting minutes

Raymo asked if anyone liked to amend the last meeting minutes and no one raised concerns.

SASEC Motion 1106-02: SASEC approves the minutes of its 11th meeting on 18-19 January 2011 in Miami, USA.

Quinn moved, Humphris seconded; 10 in favor (Arai, Becker, de Leeuw, Humphris, Kato, Kitazato, Takahashi, Quinn, Raymo, Teagle); 2 non-voting (Filippelli, Suyehiro)

1.7. Review of items approved since last meeting

Raymo noted that SASEC consensus 1105-01 was only one consensus that was approved since the last SASEC meeting.

SASEC Consensus 1105-01: SASEC is deeply concerned that operations on the JOIDES Resolution are being reduced from eight to six months in FY12 (four to three expeditions per year). This reduction, based on budget guidance from NSF, places present and future scientific ocean drilling at serious risk, despite the fact that the unique capabilities of the JOIDES Resolution continue to lead to groundbreaking discoveries in the Earth sciences.

SASEC is also deeply concerned that this operational reduction sends a negative signal to the ocean drilling community at a time when the current program is coming to an end and a new initiative is being developed. The most immediate impact of this reduction is the postponement of South Alaska Expedition 341 to FY13. In addition, reducing operations of the JOIDES Resolution creates an unsustainable situation for the US Implementing Organization, especially in terms of maintaining the technical infrastructure required to operate a state-of-the-art drillship, one that was the beneficiary of an NSF funded >\$100 million dollar refit and lab upgrade not 3 years ago. SASEC is concerned that an ongoing reduction to six months of operation per year may also limit the ability of the vessel to conduct expeditions in the Western Pacific, Indian and Southern Oceans, which would be a major limitation on a truly global program that is the world's largest international geoscientific collaboration. Most seriously, this is a disheartening blow to the community momentum in support of establishing a new international program of scientific ocean drilling, support initially demonstrated at the INVEST meeting and which is now manifest in the new Science Plan.

SASEC recognizes that hard choices need to be made in today's difficult budgetary climate, where keen competition exists for limited resources. However, the history of the drilling program demonstrates that the investment in ocean drilling is returned many times over in terms of advancing the frontiers of science and technology via publication, outreach and international collaboration. Ocean drilling serves as an international scientific incubator where the leaders of today were the graduate students of yesterday and the leaders of tomorrow are the sea-going graduate students of today. Indeed, scientific ocean drilling is the model for using a multi-disciplinary and multi-national approach to address scientific challenges of global scope and significance.

SASEC implores the NSF to reconsider its decision.

2. SPC report

Filippelli provided SPC report. The report items are 1. Rapid response drilling, 2. IODP/ICDP task force, 3. Global proposal review and 4. Normal SPC review.

[Rapid response drilling]

Filippelli explained the concept of rapid response drilling by citing SPC consensus 1103-03.

SPC Consensus 1103-03:

The IODP community is deeply saddened by the devastating effects of the March 11, 2011 Tohoku earthquake and resulting tsunami in Japan, and expresses its deepest concerns for the well being of all affected by this natural disaster.

The SPC recognizes the scientific challenges and responsibilities that this earthquake has created regarding the understanding about the nucleation of great earthquakes, associated tsunami, and submarine slide generation, to contribute to geohazard mitigation. Spearheaded by ICDP, past workshops have addressed the scientific rationale for rapid response drilling into large slip fault zones that have recently ruptured. The existing deliberations through international workshops to determine the time frame for rapid response drilling suggests that planning for this must be initiated immediately. Based on this scientific framework, the SPC therefore recommends that IODP in conjunction with colleagues from ICDP, contribute intellectual capacity by forming a detailed planning group (DPG) to provide a scientific assessment of the viability, strategy, and time period for a potential rapid response drilling effort within the region affected by the Tohoku mega-earthquake.

The DPG will be populated and supported by IODP as per IODP policies, recognizing the especially strong knowledge base, ongoing activities, and interest held by Japanese researchers and institutions.

The DPG will:

- 1) Evaluate the overall scientific merits and feasibility of a rapid response drilling project

2) Assuming (1) suggests a strong scientific case can be made, outline a research and drilling plan including required pre-drilling survey data, draft locations and depths of drilling, and hole and observatory design.

To accomplish this in a timely manner, the DPG needs to be formed by April 15, 2011 and submit a first, interim report to IODP-MI by June 8, 2011. If justified by the interim report, a full proposal for drilling will be requested for submission with a tentative deadline of August 1, 2011. The DPG can work in part through electronic means, but at least one planning DPG meeting is anticipated to take place as per general IODP policies.

Terms of Reference -

The rapid response Tohoku drilling detailed planning group (DPG)

The DPG will:

- 1) Evaluate the overall scientific merits and feasibility of a rapid response drilling project
- 2) Assuming (1) suggests a strong scientific case can be made, outline a research and drilling plan including required pre-drilling survey data, draft locations and depths of drilling, and hole and observatory design

To accomplish this in a timely manner, the DPG needs to be formed by April 15, 2011 and submit a first, interim report to IODP-MI by June 8, 2011. If justified by the interim report, a full proposal for drilling will be requested for submission with a tentative deadline of August 1, 2011. The DPG can work in part through electronic means, but at least one planning DPG meeting is anticipated to take place as per general IODP policies.

Timeline for RRD-DPG:

1. DPG needs to be formed by April 15, 2011
 2. Submit a first, interim report to IODP-MI by June 8, 2011
 3. If justified by the interim report, a full proposal for drilling will be requested for submission with a deadline of August 1, 2011
- Pre-reviewed at OTF, review taking place at SPC, which is expected to endorse the DPG

report, and provide feedback to the group in anticipation of a proposal

- A time block (~2.5 months) for potential operations has been inserted into the Chikyu FY12 drilling schedule, which meets the temporal requirements of the operations

4. SPC is prepared to review a proposal at the August meeting

[IODP/ICDP Task Force]

Filippelli introduced SPC consensus 1103-06 concerning IODP-ICDP collaboration.

SPC Consensus 1103-06: The Science Planning Committee (SPC) of the IODP recognizes significant potential synergy in research goals of IODP and ICDP. The SPC seeks to improve collaboration between these scientific drilling programs and minimize any potential roadblocks to future research collaborations, particularly for onshore-offshore transects. Thus, a short meeting of a task force is proposed, to include representatives of IODP-SPC (Chair and one member) and IODP's management and representatives of ICDP-SAG/EC and ICDP management. The goal of this task force will be to develop a structure to promote collaboration on projects with common goals, and to improve communication on relevant proposals under consideration. The ultimate goal will be joint project development, coordination of proposal actions, and joint funding as appropriate.

As a result of SPC's keen approach to ICDP, the ICDP executive committee unanimously endorsed the SPC consensus and agreed to form the task force. SPC fully supports this task force for the establishment of better ties with IODP.

ICDP representatives for the planned task force:

Stephen Hickman	SAG chair
Pierre Francus	EC member, Canada
Denis Rousseau	EC member, France
Uli Harms	EC Secretary

Filippelli anticipated the task force to have one member from each of SIPCom, PEP and IODP-MI.

The meeting will take place before AGU in December.

[Global proposal review process]

As SASEC requested SPC, SPC reviewed proposals at the SSEP stage and discussed which proposal should be forwarded to the new system and which should not. SPC reviewed 41 proposals and decided to forward 25 and not to forward 16. Filippelli showed the list of the deactivated proposals.

Deep Biosphere and Subsurface Ocean:

Proposal#	Short Title
685-Full	Ligurian Margin Borehole Observatory
701-Pre2	Great Australian Bight Deep Biosphere
715-Full	Mediterranean Landslides
743-Full	Gulf of Mexico Hydrate Dynamics
764-Pre	TAG II Hydrothermal System

Environmental Change, Processes and Effects:

Proposal#	Short Title
645-Full3	North Atlantic Gateway
656-Full4	Belize Margin Paleoclimate and Tectonics
683-Full	East Asia Topography and Monsoon
710-Pre2	Gulf of Corinth Rift
737-Full2	North Sea Cenozoic Climate Change
746-Pre	Arctic Mesozoic Climate

Solid Earth Cycles and Geodynamics:

Proposal#	Short Title
623-Full4	Ontong Java Plateau
718-Pre	Pacific Plate Petit Spot Volcanism
725-Full	NE Atlantic Volcanic Rifted Margin
727-APL	Afar Mantle Plume Dispersion
766-APL	Essaouira Seamount Hotspot

Raymo commented that she heard no negative feedback about this deactivation process, which suggests SPC did a good job. Filippelli noted that he would notify the proponents of the forwarded proposals about what's going on with their proposals, and offer them the

opportunity to withdraw their proposals.

[Normal SPC Review Process]

Filippelli presented the SPC proposal ranking.

Non-riser proposals:

Rank	Proposal	Title	Proponent	Mean	Stdv
1	595-Full4	Indus Fan and Murray Ridge	Clift	1.63	0.62
2	697-Full3	Izu-Bonin-Mariana Rear-Arc Crust	Tamura	2.56	1.59
3	703-Full	Costa Rica SeisCORK	Brown	3.56	1.9
4	589-Full3	Gulf of Mexico Overpressures	Flemings	3.81	1.38
5	555-Full3	Cretan Margin	Kopf	4.5	1.15
6	669-Full3	Walvis Ridge Hotspot	Sager	4.94	0.93

SPC forwarded the top two ranked Non-Riser proposals, 595-Full4 Indus Fan and Murray Ridge and 697-Full3 Izu-Bonin-Mariana Rear-Arc to the Operations Task Force (OTF).

MSP proposals:

Rank	Proposal	Title	Proponent	Mean	Stdv
1	758-Full2	Atlantis Massif Seafloor Processes	Früh-Green	1.47	0.64
2	672-Full3	Baltic Sea Basin Paleoenvironment	Andrén	1.67	0.62
3	748-Full2	Nice Airport Landslide	Stegmann	2.87	0.35

SPC forwards the two ranked MSP proposals, 758-Full2 Atlantis Massif Seafloor Processes and 672-Full3 Baltic Sea Basin Paleoenvironment, to the Operations Task Force (OTF).

There was only one riser proposal, 698-Full3 Izu-Bonin-Mariana Arc Middle Crust, to review at the last SPC meeting. SPC voted over the motion, “The SPC forwards proposal 698-Full3 Izu-Bonin-Mariana Arc Middle Crust to the Operations Task Force (OTF).”, and the motion failed.

[Next SPC meeting]

The next AGU meeting is planned in Sendai, Japan, 22-25 August.

SPC will review:

- Proposals currently at OTF, make recommendations to new SAS about retaining proposals, deactivating proposals for resubmission to new SAS
- Rapid response drilling proposal, if received
- The two major MSP proposals at OTF undergoing active scoping, Chicxulub Impact and Baltic Sea Paleoenvironment, and rank in priority for FY13. Pass this ranking to OTF and ESO for consideration (SASEC involvement?)

Filippelli commented that he was not sure at what point SASEC might want to be involved in this MSP issue. Raymo suggested now in this meeting. Filippelli pointed out that SASEC was not familiar with the proposals. Gatliff explained that Chicxulub would be more expensive than the Baltic Sea, and ESO will only be able to afford to do one of those two before the end of the program. If the Baltic Sea will be chosen, ESO might be able to do two less expensive proposals. de Leeuw commented that this is more than just making a choice between the two proposals because, as Gatliff said, if we drill the Baltic Sea, we could drill others as well. Taking into consideration this point and the political difficulty in Mexico, Baltic Sea might be more advantageous. Gatliff commented that both Chicxulub and Baltic Sea were making good progress concerning political issues. Mével commented that Baltic Sea has a lot of visibility in the Europe and the European Commission, because the Commission has already a program about Baltic Sea. Quinn noted that it was too early to make a decision because SASEC did not have enough concrete information to really make a definitive statement. Humphris and de Leeuw agreed with Quinn. Raymo suggested that SASEC could consider the larger issues like outreach aspect and engagement of the public in addition to scientific evaluation. Filippelli commented that he was interested in hearing some of the larger issues particularly related to how it would enhance visibility in terms of the new program, although he agreed with Quinn and commented that SASEC would be well prepared to give an advice on this issue in future.

Yeats commented that it does not make sense from a process point of view that SASEC as

the executive committee has its own meeting before one of the subcommittees which makes a big decision to the program. Raymo agreed with Yeats and suggested having one more meeting over internet to discuss the rapid response drilling and MSP issues.

Yeats asked if there is enough overlap between the current SASEC and the SIPCom memberships to leave corporate memories in the new system. Larsen replied that the new SAS membership was taken care of by the PMOs and they would migrate a lot of the existing members into the new structure. Raymo asked Larsen if IODP-MI would be making sure there is some continuity in the membership. Larsen replied yes.

Humphris noted that SASEC has a responsibility to decide on these two issues, so SASEC must discuss on them before it is dissolved. Larsen agreed.

Filippelli commented that SPC would be able to present the science summary for those issues after August 25th. Quinn suggested setting a date for SASEC discussion to sometime in September. Raymo suggested the first two weeks in September. Larsen suggested a video conference.

<p>SASEC Action Item 1106-3: SASEC will review, advise, and/or approve SPC recommendations for final MSP expeditions.</p>
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3. Annual program plan

Suyehiro provided IODP-MI Budget updates. FY12APP was not ready to be presented at this SASEC meeting because the current APP did not reflect the ship schedule recommended by OTF previous week. The APP would be ready for SASEC review in July after receiving revised APPs from each IO and merging them into IODP-MI main text. The funding level for FY12 would be the same as FY12, 23.5 million.

Regarding FY11 APP, IODP-MI revised it three times to reflect updated ship schedule after SASEC Kyoto meeting where SASEC approved the first version. The third version recently got the final approval from NSF. The recent change includes the operating cost change for the Shimokita CPP expedition, which total amount was increased by nearly half a million but still under the budget guidance.

The budget for FY11 includes the unobligated carry forward \$700k from FY10. "Carry forward" means the budget for tasks that were not finished in FY10, and it would be used for engineering developments in future. The postponed expeditions due to Tohoku earthquake caused 2.9 million of carry forward from FY11 to FY12.

Becker asked what is the time line for the SASEC budget subcommittee. Suyehiro replied that IODP-MI needs to submit the final APP to BoG, and then to NSF by the end of July. Calculating backward, IODP-MI needs SASEC 's approval by early July.

Raymo asked if Suyehiro had a plan to have a budget meeting at this stage of process. Suyehiro replied that he prefer meetings with each IO individually rather than having with all IOs together.

Humphris commented that early July deadline might not be realistic because it takes time for the budget subcommittee to understand, and then send out to members and they also need time to understand. Raymo replied that it might not be as difficult as we think it would be if IODP-MI clarifies the key difference from year to year. Quinn agreed with Humphris because SASEC does not do rubber-stamping but oversee. de Leeuw noted that if Suyehiro will present only the difference from the last version, it would be only a couple page document to look at. Suyehiro commented that he could provide an explanation for SASEC exclusively because it is difficult to make a single document to satisfy SASEC, BoG and lead agencies at the same time, as they need it differently.

Yeats asked if the 2.9 million carry over is to help to fund Chikyu. Suyehiro replied basically yes, but it depends on how IODP council interprets the MOU. Raymo commented that it would hopefully help JR as well. She expected Suyehiro to report clear summary on this in the next six weeks.

SASEC Action Item 1106-4: SASEC will review FY12 APP provided by IODP-MI to SASEC in early July. Budget subcommittee will provide summary and recommendation to SASEC soon afterward. SASEC will then forward its recommendation to BOG in a timely manner.

4. End of Program planning: Budget and Tohoku EQ impacts

4.1 Status of Chikyu

Eguchi provided a report of Chikyu status. Tsunami induced by M9 Tohoku Earthquake hit Chikyu and causes severe damage (Dropped azimuth thruster, tangled anchor chain, holes the bottom of the ship). Eguchi indicated the damage area on Chikyu's design specifications and pictures. The repair plan is 1) Reconstruction outer and inner structure of fuel oil overflow tank void space, 2) Retrieve 4P Azimuth thruster platform and close open space. He explained that Chikyu was under repair, and would be back in her business from July. The first cruise after coming back from dock will be for non-IODP in Sri Lanka from middle of July to February 2012. The #6 thruster installation is planned to March 2012. Return to IODP operation is planned to April 2012.

4.2 Rapid Response Drilling DPG Report

Kevin Johnson provided Rapid Response Drilling Detailed Planning Group (RRD-DPG) Report. RRD-DPG consists of 20 members from 6 countries. Their first meeting was in Tokyo, 18-20 May.

RRD-DPG Members:

Name	Affiliation
Shuichi Kodaira	JAMSTEC
*Emily Brodsky	UC Santa Cruz
*Jim Mori	DPRI, Kyoto Univ.
Satish Singh	Institute of Earth Physics of Paris
Rob Harris	Oregon State
Ryota Hino	Tohoku Univ.
Jeff McGuire	WHOI
Weirin Lin	JAMSTEC
Tetsuro Hirono	Osaka Univ.
Kohtaro Ujiie	Tsukuba Univ.
Tsuyoshi Ishikawa	JAMSTEC

Saneatsu Saito	JAMSTEC
Fred Chester	TAMU
John Townend	Victoria U Wellington
Haibing Li	Chinese Academy of Geological Science (CAGS)
Steven Smith	INGV
Harold Tobin	Univ. Wisconsin
Masanao Shinohara	ERI, Univ. Tokyo
Yuichiro Tanioka	Hokkaido Univ.
Satoshi Ide	Univ. Tokyo

*Co-chairs

Seven reasons were given as the rationale for RRD. 1) Co-seismic stress best inferred from the frictional heat generated on the fault, and measured by a temperature profile across the fault. 2) Characterization of the local hydrologic properties is also needed for this calculation. 3) Physical fabric in a core sample of the fault gives valuable information on the local stress and the scale of the deformation. 4) Laboratory experiments on the fault material to directly measure the frictional properties. 5) Geochemical and mineralogical analyses provide additional constraints on the temperature and stress conditions at the times of earthquakes. 6) Some of these observations are transitory (temperature distribution, hydrological properties, and geochemical markers), so measurements need to be made soon after the fault slips. 7) A borehole drilled quickly (within 2 years) into the fault will capture the time-dependent features and provide valuable information that is rarely available following large earthquakes.

The following concerns were put forward at the RRD-DPG meeting. 1) Water depth near or somewhat in excess of 7000 meters. 2) More detailed Site Survey Data are needed for site selection – currently ongoing. 3) Potentially unstable formation conditions within and above the main target zone, including potential for strongly elevated pore fluid pressure, and 4) Requirement for 1-2 years from March, 2011 allows only short lead time for preparation of downhole equipment and observatory elements including casing, seals, sensors, umbilical cables, and data loggers.

RRD-DPG concluded with the following four recommendations.

- 1) IODP should carry out a Rapid Response Drilling Project for the Tohoku earthquake if,
 - A fault with significant slip can be reached AND there is a reasonable chance to obtain a

core sample of the fault zone. Also, LWD can collect physical data (such as temperature, seismic velocity, density, resistivity, density, magnetic resonance, formation pressure) in the vicinity of the fault zone.

-- Time-dependent measurements (temperature, permeability, geochemical analyses) can be made soon after drilling and several months later.

2) IODP should NOT carry out a Rapid Response Drilling Project for the Tohoku earthquake, if a slipped fault cannot be reached.

3) Following this very large earthquake, many important scientific issues should be addressed by drilling boreholes into the fault region.

-- Many of these observations are NOT time critical, so may not be a need for a rapid drilling project for these investigations. Regular proposals in the IODP system should be considered to understand the very large fault slip and resultant devastating tsunamis.

4) Retrieving a core sample from the large-slip fault is important, but the case is not as strong that this must be done quickly after the earthquake.

-- Some aspects of the fault core analyses change with time, and the LWD may be able to detect a temperature anomaly,

--However, the importance of these factors cannot be fully understood at this time.

The meeting report was already submitted before this SASEC meeting and circulated among the members. If justified by that report, a full proposal for drilling will be submitted by August 1, 2011. If the drilling feasibility cannot be proved, any proponent can submit a proposal in normal fashion.

Raymo asked who evaluates the RRD plan outlined in the meeting report. Johnson replied that SPC does the first cut and the result of their evaluation would come up in weeks. SPC would invite the proponents to submit a proposal by 1 August. Hans Christian Larsen

commented that they could decide themselves to submit the proposal.

Raymo asked if Chikyu already has a potential time window for RRD. Johnson replied that it was discussed in the OTF meeting just before this SASC meeting and it is tentatively set to April to June 2012 before Shimokita expedition.

Azuma commented he was optimistic about technology but not so about budget. This project needs more understanding from the NSF, MEXT and then IODP-MI. Raymo commented that SASEC should consider what we should give up for RRD. Yeats commented that RRD should be done in timely manner otherwise nothing can be expected from a proposal submitted for the normal process. Teagle agreed and commented that IODP cannot miss this chance because the program was not able to react to the previous big earthquake in Sumatra and there might be no such earthquake in 40 years ahead. The program needs to know if it is scientifically reasonable, technically possible and financially possible as soon as possible. Larsen added that the program needs a risk assessment before decision on RRD.

Mével concerned about the lack of site survey data to locate the holes. Ridley pointed out that important temperature data couldn't be come out before such short deadline. Johnson commented that it was discussed in the DPG and concluded that the parameters would be estimated from experiments and models, but he did not think that the numbers would be definitive before the proposal deadline. Larsen commented that the proposal would be more generic than normal proposals.

Kato commented that the program need to carefully explain what the program can do and cannot do to outside of IODP community because people would expect a lot from RRD as this topic is very delicate and still the center of public attention especially in Japan. Raymo agreed and commented that it would be good that people understand the risk.

Batiza asked if there are Japanese groups who are working on post-earthquake monitoring for better forecasting in the future. Suyehiro replied that one of the DPG members is in charge of leading all Japanese national university efforts in observing coastal seismic activities. Kitazato added that not only seismologists but also microbiologists and chemists are actively observing post-earthquake phenomena. For example, many different signals of

carbon isotope were detected so far. He commented that the proposal could be improved with broader interdisciplinary background. Raymo and Johnson agreed with Kitazato. Johnson informed that the DPG has geochemists but no microbiologists. He suggested that SASEC or SPC makes a recommendation to this end.

Humphris commented that if the program does not respond to this earthquake, it might be a negative message to send because this program is often accused of not being able to respond to things fast enough and the new program has geo-hazard as major theme----so it is important to demonstrate what this program can be responsive. She suggested encouraging the DPG to submit a formal proposal as soon as possible and, at the same time, encouraging CDEX to investigate what it would take to do this project and whether it is technologically feasible?. Quinn and Becker agreed with Humphris. de Leeuw also agreed, and suggested adding one or two paragraphs about outreach for the politicians and for the public, because the program needs to explain that this is a very risky enterprise and may fail for that reason. Kato agreed with de Leeuw.

Becker suggested asking outside expertise for their help in the assessment of technological feasibility. Raymo commented that the proponents could work with the IOs and they will decide if they need to seek outside advice.

Teagle asked if it is possible to scope science justification and the technical justifications separately. Raymo replied that the proponents have to present technological feasibility together in the proposal because there is no time to do them separately. Eguchi commented that CDEX could help PIs in technological part.

Ridley suggested that SASEC shows them the options at certain points along timeline including 2012. Johnson agreed with Ridley.

Raymo asked Humphris to draft consensus statement.

<p>SASEC Consensus 1106-5: The Tohoku mega-earthquake was a major tragedy of national and international importance. The rupture is the best geophysically imaged major seismic</p>

event ever.

SASEC thanks the Detailed Planning Group for its excellent report on the potential for a rapid response following the Tohoku earthquake, and is excited that this group has initiated discussion of the scientific opportunities and technological challenges. In recognition of the immense significance and impact of this mega-earthquake, and of IODP's potential capability to address key parameters and processes that can only be determined immediately after the event, SASEC invites a drilling proposal to be submitted by 1 August 2011.

The scientific program of the proposal should be carefully developed and tightly integrated with the necessary technological capabilities. The proponents must convincingly articulate how samples and data recovered will address the science objectives proposed. The proposal should provide options for measurements of ephemeral properties as they relate to various scheduling options.

SASEC also requests that CDEX, in cooperation with the drilling proponents, initiate an assessment of the technological feasibility of the proposed drilling program.

SASEC plans to review all information and consider approval for scheduling before it is disbanded at the end of September 2011.

SASEC Action Item 1106-6: SASEC will review SPC recommendations for a RRD expedition to Tohoku earthquake zone, and consider the issues concerning technological capability and achievement of NanTroSeize objectives in time remaining, as well as implications for FY12 APP.

4.3 Budget status for JR operations FY12-13

Batiza provided the budget status. He informed that the amount of FY11 budget is still uncertain. There was information about \$3 million increase in budget, but it is becoming unclear. If NSF continues to be level funded and there is no additional money to the IODP budget, it means that this program is not sustainable. In that case, this program could lose

JR and the program renewal.

Raymo asked if that means that this program would not be funded two years from now if NSF does not fund it now. Batiza replied yes. Becker asked if that also means that Transocean will leave IODP. Batiza replied that if JR operates only six months a year, the crew would leave and find jobs elsewhere. The same thing would happen with Texas A&M.

Raymo asked how NSF received the community's reaction (letters and emails) to the news of reduced JR expeditions. Batiza replied that he received most of the letters from the community while Tim Killeen received a few directly. The letters came from everywhere in the world, the number of the letters were about 800, and they were very reasonable letters talking about the importance of drilling program to science.

Teagle asked if National Academy of Sciences can have a different opinion. Batiza replied that there is an ongoing National Research Council Study of Scientific Ocean Drilling - Past Accomplishments and Future Promise. They receive a copy of the new science plan and they have a meeting on July 14th and 15th in Boston. They will then write their report, which would hopefully be positive about continuation of drilling. The report is due out in early October and we will see how it is received by NSF at high levels. Becker commented that there was a recent announcement of new Geo Advisory Committee. He asked Batiza if he could explain the details. Batiza explained that David Conover formed an ad-hoc subcommittee of the advisory committee to the Geo director in order to provide advice on the future of scientific ocean drilling. But it has not officially been formed yet. Now it is in the phase of selecting members. Their first meeting will be in this summer and be complete by January. They will read the National Research Council report, the latest triennium reviews of the program and the ocean research priority plan that is from the National Ocean Council. Filippelli asked if the membership includes people with much knowledge of IODP. Batiza replied that they want no formal involvement of the drilling community but they want someone who knows enough about IODP.

de Leeuw asked if the borderline between sustainable and non-sustainable is up to JR expedition review. Batiza replied yes. de Leeuw asked how much is required to keep the

program sustainable, in other words, how much is required to operate JR for eight months instead of six months. If we have a certain ballpark number, we can try to help NSF to get the money. Batiza replied that he did not have a simple answer because different expeditions cost different amounts of money. But it's probably \$5-20 million per year to go up to eight months.

Raymo voiced her concern about what kind of action SASEC can take now. Batiza replied that it is out of our hands and we have to wait and see.

Larsen asked for overall view of the Ocean Research Priority Plan. Batiza replied that it is very general in the nine different themes.

Teagle commented that IODP is now a bigger program than ODP, but does less science. He noted that the Europe needs to come to the table with this issue and talk how they keep the program. Mével added that MSP is politically the key for Europe to keep funding from the agencies. de Leeuw agreed with Mével, and added that JR is as important as MSP for Europe. Mével replied that it is true for scientists, but actually MSP is more important to get money from European agencies. de Leeuw agreed with Mével.

Assuming the ballpark number is 10 million, de Leeuw suggested applying MI's US\$2.9 million carry over to JR operation. Batiza replied it would be helpful and added that it needs IWG+'s and IODP council's agreement. Suyehiro noted that it is extremely important for IODP-MI to raise funding from existing members as well as to explore new members.

Yeats commented that the program needs more flexibility in budget distribution, the number of ships and target places, to sustain the program. Suyehiro commented that IODP's advantage is having three different ships, which are complementary to each other. Losing the advantage would kill the program. Teagle and Raymo disagreed with Suyehiro. Raymo commented that JR is heart and soul for the most people in the community. She asked if the program has only JR, would Europe walk away from the program. Mével replied that it might. Teagle pointed out that in ODP it was clear to see how the money went and how much returned into science, but IODP seems to need more money and provides less return.

It would be hard to keep the community engaged with the current situation.

Suyehiro commented that he expected an increase in the number of members and in the contribution from existing associated members. That is the first thing we should try. China may want to become full member in the near future, Indonesia, Taiwan, South America, Brazil, Russia, South Africa or even Middle East.

Larsen asked if taking account of JR's future non-IODP work could change the perspective. Divins replied that JR cannot count on any non-IODP work on a regular basis because there is no guarantee we can find it. Clement commented that there was a huge amount of effort over the last few years trying to obtain commercial work. It was harder than it should be because it was non-funded mandate with no support. Larsen asked if it could be easier if the NSF contract with JR changes. Clement replied that even if it is changed, still there are hurdles until the industrial world recognizes what JR can do. Ridley commented that lots of people at NSF and in the community don't like the drilling program, so convincing funding agencies to put money into it is not easy.

4.4 Proposed Chikyu schedule through end of program

Eguchi explained that Chikyu does non-IODP Work from middle of July to February next year. Then, it will be tied up for the reinstallation of the thruster in March 2012. The next IODP operation windows will be opened from April to December 2012. The future Chikyu expeditions were discussed at the OTF meeting previous week.

Kuramoto commented that the situation is complicated because of the earthquake. As Japanese cabinet prioritizes re-building tsunami hit area, budget for science has not been discussed yet, but he hoped to keep the same amount of the money as the last year. Raymo asked how many months can be covered with that budget level. Kuramoto replied five months for riser.

Shibata commented that SASEC and IODP community need to realize the trade-off between Rapid Response Drilling and NanTroSEIZE. If this program does Rapid Response Drilling, that means the program cannot achieve the NanTroSEIZE's original goal, reaching the plate boundary. Eguchi commented that it needs 6.4 months of continuous operation to reach 5200m by FY13. Raymo asked if it means that Rapid Response would negate the possible achievement of NanTroSEIZE by the end of FY13. Shibata replied yes. Yeats noted that there needs to be more information to decide something on this issue right now. Raymo agreed with Yeats.

Suyehiro commented that Japanese science community is expecting penetration to the plate boundary and installation of the observatory. But because of the earthquake, Japanese science community would understand that goal would be delayed. Shibata commented that Japanese general public is concerned with future earthquakes that NanTroSEIZE could predict, rather than next huge megathrust earthquake in Tohoku in 1000 years. Suyehiro noted that seismologists are trying to understand how the Tohoku earthquake can be applied to any other large earthquakes for future earthquake prediction. And that information can only be obtained from Rapid Response drilling. Larsen commented that the goals of NanTroSEIZE and Rapid Response are not opposed to each other.

de Leeuw commented that a presentation showing some possible scenarios in parallel would be helpful for SASEC to discuss on this issue.

4.5 MSP operations to end of program

Gatliff explained the situation about MSP. There are four projects that SPC asked ESO to scope, which are Chixculub, Baltic sea, Hawaii Drowned Reefs and Atlantis Massif. The latter two are seabed drill proposals. Seabed drilling in Arctic is politically important for Europe. It would be a strong candidate for the new program, but in this program, ESO secures money for at least one of the two, Chixculub or Baltic Sea for FY13. The plan for 2012 is to do a hazard survey in Mexican waters.

Yeats asked the difference in cost is for Chixculub and Baltic Sea. Gatliff replied that he would not know until the public tender. ESO inquired of companies what their ballpark figures, but no response yet. Yeats asked if ESO plans to tender both projects. Gatliff replied yes.

Yeats commented that the Baltic Sea seems to be politically very important to secure future of the program in Europe, as Mével alluded. He asked if this information influences the choice between Chixculub and the Baltic Sea. Gatliff replied that it is not ESO to make the decision. ESO's responsibility is to go along with the panel's decision. Mével commented that Chixculub has also the advantage in links to ICDP, and hard to say which one would more benefit Europe. The Baltic Sea could be better to pull money from European Commission, but she was not sure of this.

4.6 SASEC directives for Long-range Plan to end of program

Raymo referred to the SASEC consensus 1006-11, and she commented that the recommendation seemed to have to be withdrawn for reasons that the program cannot afford the transit of running half the world away from its home port.

SASEC Consensus 1006-11: SASEC has reviewed the alternative drilling scenarios for the remainder of IODP through 2013 that have been developed by SPC/OTF in response to SASEC Consensus 1001-14, and thanks them for the considerable effort they have put into completing this task. While SASEC understands there are transit penalties in going to the Indian Ocean, the committee strongly endorses the inclusion of drilling of Proposals 605-Full2 Asian Monsoon and 552-Full3 Bengal Fan before the end of the program. These address high priority scientific objectives of the Initial Science Plan (ISP) and important societal problems.

The recommended schedule for the JOIDES Resolution for FY12 should be based on completing the ISP in the best way possible.

Divins noted that FY13 JR schedule has Asian monsoon expedition. Raymo asked if the plan would be doable with the high fuel prices. Divins replied that if there are extra funds, it is doable. This year's issue is the huge transit from the Caribbean all the way to Victoria. The transit from Victoria across to Yokohama is actually much shorter. He suggested not going from half way around the world to get there. If expeditions are in the Western Pacific, maybe 2015 would be logistically better to enter the Indian Ocean. That would be a smaller transit. But transit from Eastern Pacific all the way around to Indian Ocean is a problem. If SAS starts publicizing where the ship is anticipated to be, people can start writing proposals.

Teagle commented that what has not been done in the community is top-down acceleration in nurturing a significant number of good but maybe not quite yet great proposals in the system. That would give a really wide geographic range of proposals for efficient schedule. Becker commented that that concept is written up for the new SAS. But it is not updated with OTF.

Raymo asked if Alaska Margin expedition would not happen even if funding is secured. Divins replied that saving US\$2 million by not transiting around and doing something closer to other activity is a better way to spend that \$2 million.

Yeats asked Larsen for a short presentation on OTF. Larsen agreed to make a short presentation after the next coffee break.

5. Scoping of mantle drilling in new program - update

Suyehiro provided the update on scoping of mantle drilling. There were two workshops in Kanazawa and in Washington DC last year. IODP-MI was encouraged to form the Scoping Group and to submit a proposal to Sloan Foundation. IODP-MI submitted the proposal and the Sloan Foundation decision would come later in June. MI proposed establishing a project scoping office to scope scientific objectives, to foster a wider international science

community, and to work on engagement, outreach, and fundraising. Scientists and engineers will discuss options, risks, and pros and cons from a global perspective to form a coherent roadmap and report. IODP-MI was reminded by Sloan Foundational reviewers that risk assessment is the most important aspect of this study.

IODP-MI hired an energy industry consultant in Houston to provide the feasibility study for mantle drilling. The major topics are:

1. Drilling with riser in 4000 meters water depths.
2. Drilling and coring 150°C-250°C igneous rocks.
3. Reaching the upper mantle at 6000-7000 meters below the ocean seafloor.
4. Well design for the 3 potential drill sites.
5. Operational time and costs estimation for the 3 potential drill sites.

The interim report came out in early April, and it mentioned that it is indeed feasible to reach the mantle but there are the following challenges.

- Drilling with riser in ultra-deepwater environments with water depths around 4000 meters, which will set a new world record.
- Drilling and coring in very high temperature igneous rocks with bottom-hole temperatures that are estimated to be as high as 250°C which will also set a new world record.
- Drilling and coring a very deep hole with a total drilled and/or cored interval around 6000 meters in the oceanic crust below the Pacific Ocean seafloor in order to reach the upper mantle which will be a major achievement for the worldwide scientific community.

As possible solutions, they have considered four cases. Case one is that the hole is continuously cored to TD. Case two is long sections of continuous core taken across the major lithologic and geophysical transition intervals of key sections. Case three is only spot coring is done during the last 10m before each bit trip. Case four is that the hole is drilled to the Moho and the mantle is cored.

There are three proposed locations: Cocos, Baja and Hawaii. The following table shows the estimated depth and time for each location.

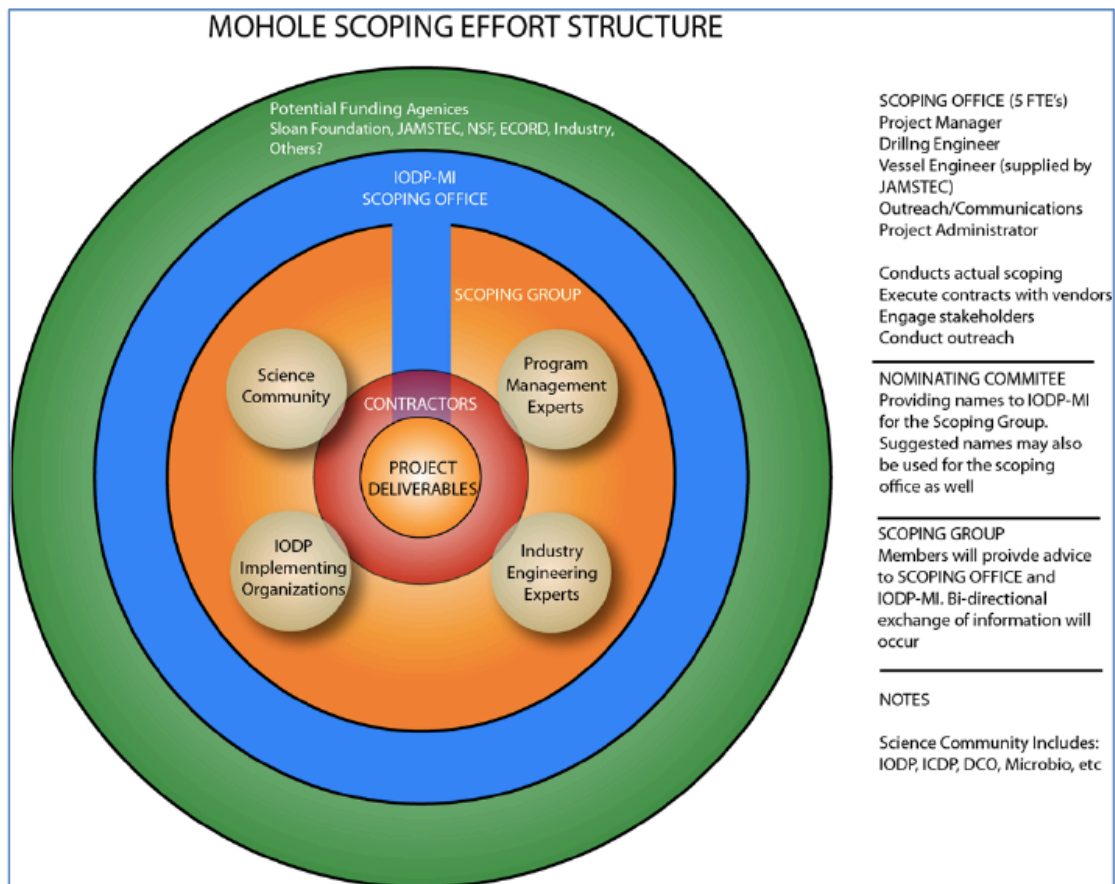
Table 12—Operational Time Estimates Summary for the 3 Locations

Candidate Location	Water Depth	Total Depth	TD BSF	Operational Time (days)					Ops Time	Project Time
				Core/Drill	Bit Trip	W/L	Flat	NPT		
Cocos Location										
Case 1	3650	9900	6250	216	261	186	33	34	696	756
Case 2	3650	9900	6250	184	234	112	34	28	564	617
Case 3	3650	9900	6250	155	187	51	40	21	433	480
Case 4	3650	9900	6250	144	172	26	33	18	374	418
Baja Location										
Case 1	4300	10400	6100	236	300	238	33	40	807	866
Case 2	4300	10400	6100	197	259	147	38	32	642	693
Case 3	4300	10400	6100	157	160	58	31	20	405	445
Case 4	4300	10400	6100	143	183	27	33	19	386	425
Hawaii Location										
Case 1	4050	10750	6700	260	319	264	33	43	876	934
Case 2	4050	10750	6700	214	285	155	34	34	688	737
Case 3	4050	10750	6700	172	177	63	36	22	448	485
Case 4	4050	10750	6700	157	204	28	33	21	422	443

The key conclusions from the study are:

1. There are existing solutions to the riser design issues
2. There are existing solutions to the drill-string design issues.
3. A key issue would be the development of down-hole tools capable of withstanding the extreme down-hole temperature.
4. A key issue would be the development of bits with improved bit life since this will have a huge impact on the operational costs and also improved core techniques that could result in faster coring rate.

Suyehiro requested SASEC members to endorse MI's activity for Mohole project and for establishing a scoping office. The project would take 10 years to reach the goal. It is estimated that the drilling cost would be US\$1 million a day, but if using Chikyu, 20% or 30% less than that could be possible.



Raymo asked if it needs a continuous drilling or separate expeditions every year for 20 years. Suyehiro replied that the cheapest way is a continuous drilling, but Chikyu might not be capable of it. Azuma pointed out that if budget is secured, Chikyu needs two years to get it done. But in reality it also needs to do non-IODP works. Mével commented that she heard from the engineers at the Washington DC workshop that you need to stay on the location and drill it to the end, otherwise, you might lose the hole. Suyehiro agreed with Mével, but he added that 5 month operation of Chikyu seems not very improper to prolong bit life.

Raymo asked where this scoping group will be located and how many FTEs it would employ. Suyehiro replied that it would consist of some dispersed offices. He was not sure how many FTEs it can afford. Raymo asked if the funding for the office will come from the Sloan Foundation. Suyehiro replied it will be a joint effort with IODP. Yeats asked how much it is expected as running cost and how much he asked for Sloan Foundation. Suyehiro replied two to three million dollars over two years and he asked for half a million dollars from Sloan

Foundation.

Filippelli asked if the engineers have much optimism about some breakthrough technology. Suyehiro replied that they did not seem to have any problem. Their concern was high temperature and bit life. Teagle pointed out that the industry companies routinely drill to much higher temperatures than 250 degrees on land. Suyehiro replied that they can start from a much lower temperature than geotherm when it's land drilling. But they have to go with the geotherm when it's ocean drilling and it is more difficult to do it after the water column.

Raymo commented that this project is very big with a dedicated office, FTEs and a large amount of money. She wondered if it is time for this project to leave the IODP nest. Suyehiro replied that it is not that big. Larsen commented that it is too late to say no because it's a significant component of the new science plan. Mével commented that this is the first time to hear that this project moving forward to the right direction. She suggested endorsing this activity now, and SASEC would decide in future if it is too much. De Leeuw agreed with Larsen and Mével.

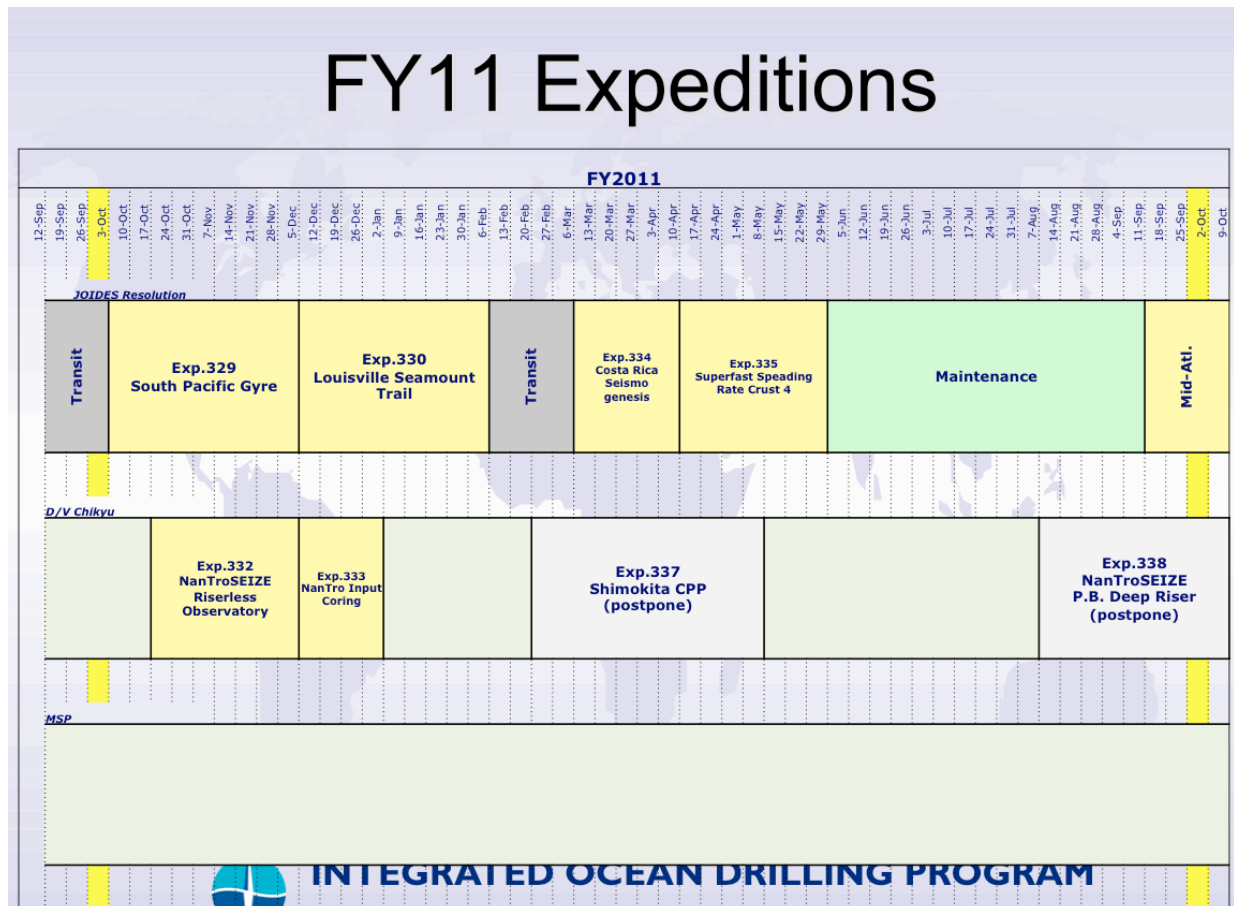
Teagle noted that SASEC cannot decide anything until site survey is done because the engineering design would be extremely site specific. Suyehiro agreed with Teagle, and informed that the site surveys were postponed to next year.

SASEC Consensus 1106-7: SASEC commends IODP-MI for pursuing external funding to scope mantle drilling. Pending a favorable Sloan Foundation co-funding decision and in-kind contributions from JAMSTEC, the possibility of establishing a scoping office will be evaluated within the context of the FY12 APP by the SASEC.

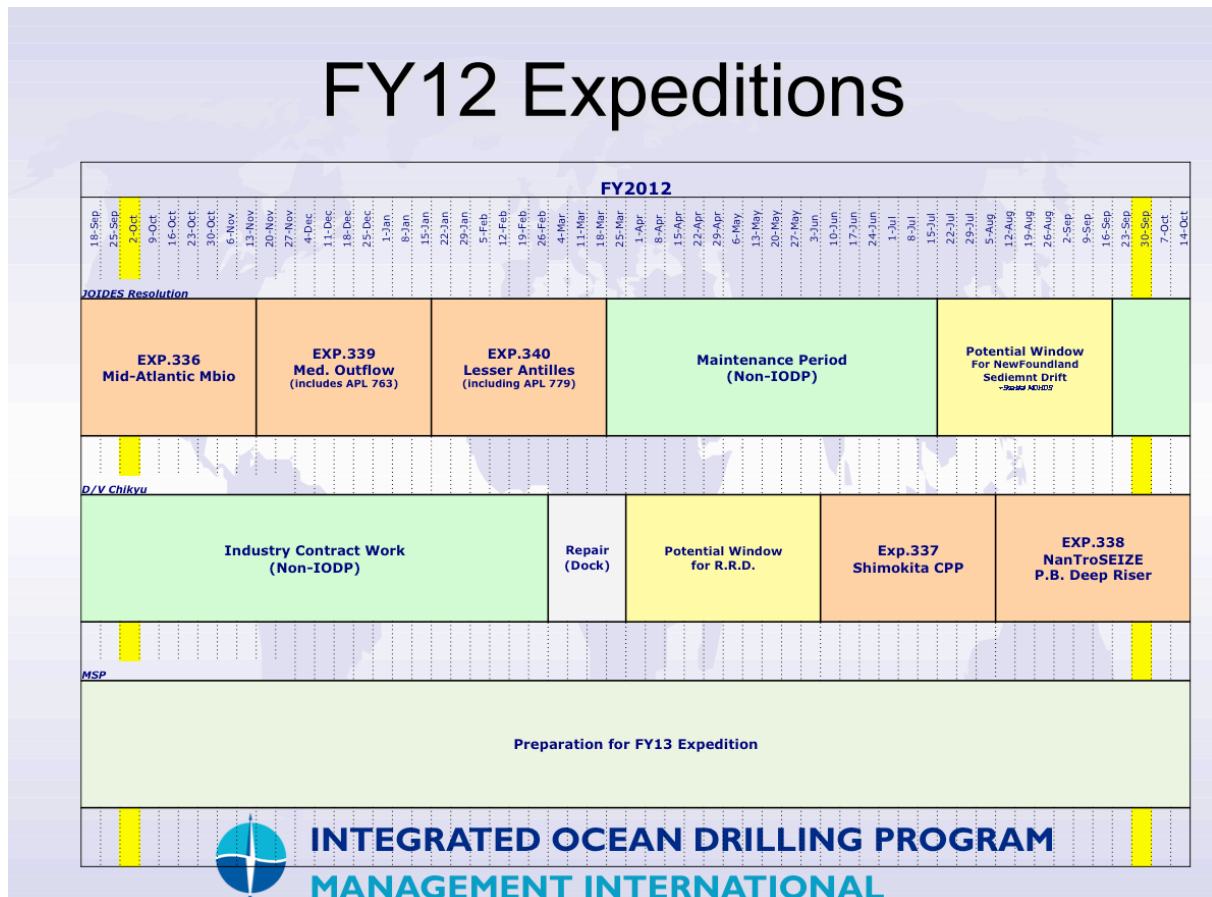
6. Program renewal update

Raymo requested that Larsen give a short presentation of the OTF meeting that was held in Edinburgh, 10-11 June.

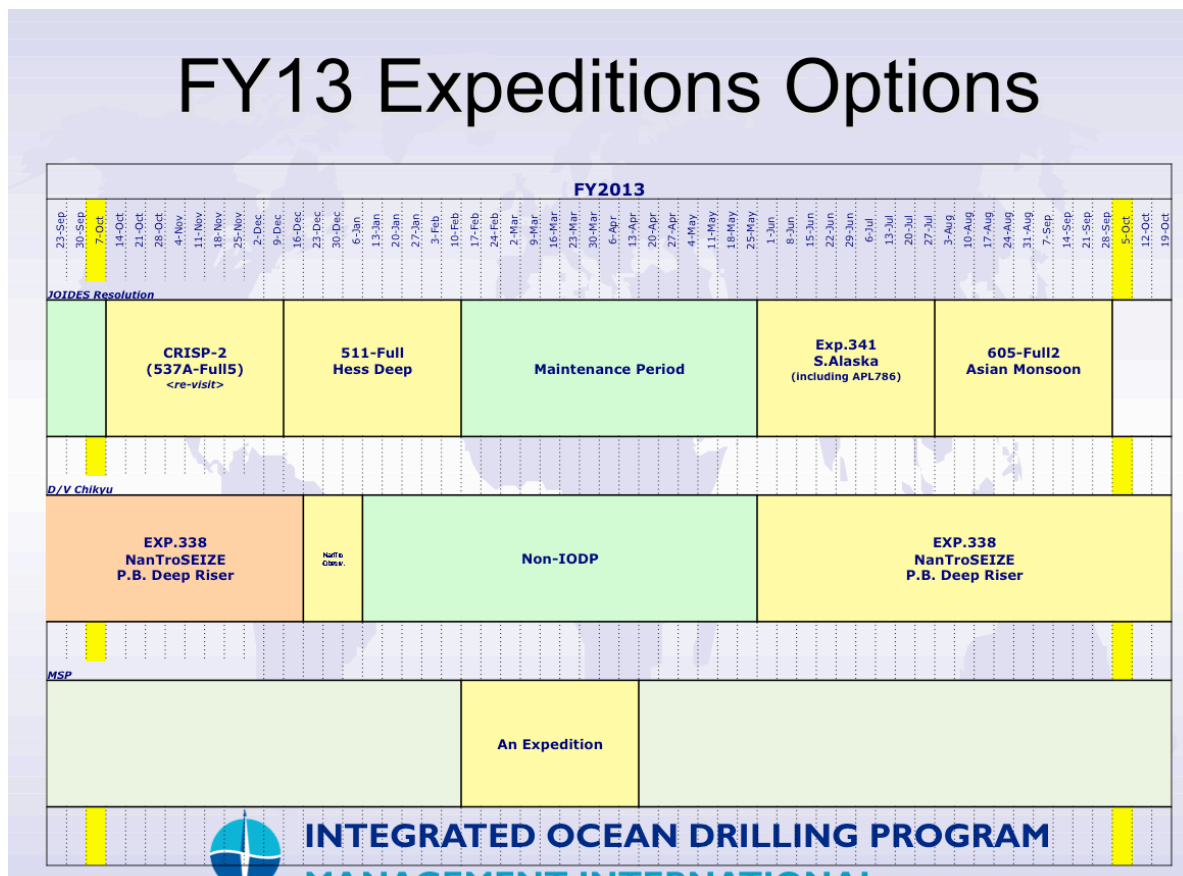
Larsen showed the ship schedules for FY11, FY12 and FY13.



FY12 Expeditions



FY13 Expeditions Options



[JR]

FY12:

- 779-APL Atlantis Massif Lithosphere Hydration on Exp. 340.
- Ex. 341 S. Alaska (inc. APL 786) has been postponed.
- Potential 4th Expedition, if additional fund will be available.
- Add MDHDS Engineering Development Sea Test, during Maintenance Period (ideally just before 4th expedition).

FY13:

- Four Expeditions planned, but may reduce to three.
- If possible, add SCIMPI Field Trial /Engineering Development Sea Test, during Maintenance Period (ideally before Exp.341 S. Alaska).

[Chikyu]

FY12:

- Oil/Gas Exploration work at Sri Lanka (five thruster mode)
- 6th thruster installation: March 2012
- Exp.337 Shimokita (CPP) from Jun 2012
- Exp.338 NanTroSEIZE (total 4 month operation) TD: 3,600m + RL Observatory at C0010
- Tohoku Rapid Response Drilling (DPG): potential window April – June 2012

[MSP]

FY12: Scoping proposals

- 548-Full3 Chixculub K-T Impact Crater
- 672-Full3 Baltic sea Basin Paleoenvironment (PMT/scoping June 2011)
- 716-Full2 Hawaii Drowned Reefs
- 758-Full2 Atlantis Massif Seafloor Processes (PMT/scoping June 2011)

FY13: TBD by SPC.

Kawahata asked how many expeditions would remain unscheduled at the end of the first phase of IODP? Larsen replied that currently 28 proposals in OTF. Filippelli commented that 8-10 of 28 proposals are in the range of the Western Pacific into the Indian Ocean, which would be for FY14 and 15. Larsen added that he expected some more proposals from India and China as CPP.

Shibata commented that MEXT was trying to secure some domestic funding for Rapid Response drilling, but could not make enough so far.

Yeats asked how many months for Chikyu could be afforded for IODP in FY12. Eguchi replied two months for Shimokita and 1.5 months for Nankai, and one month for riserless. Yeats commented that it makes less than five months a year and it was also less than five months last year. It seems constantly less than 5 months although CDEX promised more. He voiced his concern that it would be two to three months a year if CPPs that CDEX currently counts on would not come in. Suyehiro explained that it should have been more but the earthquake changed the situation.

Filippelli noted that there was one clarification from the OTF discussions, which is if only limited funding, Hess Deep will be removed from the schedule and retain South Alaska and Asian monsoon. As South Alaska would be the location that ship ends for this program, SASEC might need to re-consider whether it would be the best as the first drilling location for new program. Teagle asked what is the rationale for removing Hess Deep. Filippelli replied that South Alaska and Asian monsoon are higher-ranked proposals than most set of proposals SPC has seen in a long time. CRISP has partly done and it is very promising to finish up next time. Teagle asked if the engineering or operational issues with CRISP were

solved. Filippelli replied some of them can be overcome by casing, but some of them cannot. Some of the shallower sites were unsuccessful, but there still remain some middle and deep sites.

Quinn suggested considering where is the best place to take the demobilize the JR if the new program does not get initiated. Divins commented that Asian Monsoon would be not as advantageous as ending it in South Alaska.

Larsen asked if the OTF considered Cascadia. Divins replied that Cascadia was not considered because the CORK infrastructure was not funded.

6.1. Status of science plan

Larsen reported that the new science plan was successfully published. Larsen thanked everyone and Ellen Kappel, the science writer who made a huge contribution to this project. He suggested a SASEC consensus to thank her.

SASEC Consensus 1106-8: SASEC received the freshly printed copies of the New Science Plan during its meeting in Amsterdam and wishes to thank Ellen Kappel, who in final editing transformed excellent science into an outstanding printed document.

6.2. Revised proposal submission guidelines

Filippelli reported the update on the proposal guideline. The subcommittee circulated the draft proposal primer among SASEC member before this meeting. The primer was written under the conception of user friendly and comprehensive summary. It is only five pages for easy download. It also include a flow chart diagram of the proposal review process, but it

needs more discussion. The final version will be on the proposal submission page.

Larsen commented that the current version needs additional edits on wording, explanations for CPP, SAS structure etc. Raymo suggested one more round of revisions by subcommittee and IODP-MI, then finalizing it by August 1.

SASEC Consensus 1106-9: SASEC approves the draft IODP Proposal Primer as a resource guide, pending final minor editorial revision by the sub-committee, disbands the sub-committee after these edits are completed, and asks that the primer be added to the proposal submission website.

6.3. Call for proposals for new program

Johnson read out the following draft of “call for proposal”.

Call for Drilling Proposals

Submit by: October 1, 2011 deadline

The International Ocean Discovery Program (IODP) explores Earth’s urgent problems, such as climate change and geohazards, as well as cross-cutting topics of emerging and immediate interest, including seafloor life, serpentinization, carbon flow and storage. The Program emphasizes multidisciplinary and active experiments, with strong linkage between Earth and Life sciences. IODP uses riser and non-riser drilling platforms capable of operating in a variety of environments in order to address its new science plan (www.iodp.org/nsp).

The new IODP is scheduled to begin expeditions in September 2013. The New Science Plan, “Illuminating Earth’s Past, Present, and Future”, outlines the high priority science themes and scientific challenges that proposals should address. Additional proposal flexibility is built in to consider newly emerging opportunities and immediate scientific needs.

Complementary Project Proposals with third party fiscal contribution to operations are also

encouraged (see Proposal Guidelines, <http://www.iodp.org/drilling-proposals>).

Drilling proposals may be submitted as preliminary or full proposals, but generally the process starts with the preliminary proposal. Proposals will be evaluated by the IODP Science Advisory Structure. Successful proposals will be scheduled for drilling at a rate of approximately 5-10/year, pending scope of proposals and platform availability.

Questions: science@iodp.org.

Humphris commented that she had an impression that the last SASEC agreed that proposal should initially come in the new program as a pre-proposal. Larsen replied that it was not true. Filippelli commented that proponents could submit a full proposal but they have only one chance to revise. Teagle pointed that it did not show on the flow diagram. de Leeuw pointed out that the proposal primer showed that by “you start by writing a pre-proposal”. Filippelli replied that he wrote it as an example of a typical start.

Raymo suggested that SASEC will review the proposal submission guidelines again after IODP-MI and SASEC subcommittee make sure the wording is consistent with proposal primer.

SASEC Action Item 1106-10: SASEC will review a new version of IODP proposal primer, heeding consistency with the call for proposals.

6.4. Updates on member efforts for renewal

Raymo asked members to step forward if they have updates on the program renewal. Teagle informed that UK decided to decrease funding to IODP. He asked Mével if there are other countries making similar decisions. Mével replied that she did not know, but they would be informed at IWG+ meeting next day.

7. Renewal of IODP website/New program website

Larsen reported on the status of IODP website renewal. IODP-MI issued a public tender for the website renewal in early spring and received five proposals. However, a key IODP-MI staff has been seriously ill for a long period of time, which delayed the process. He has been recovering now and IODP-MI has resumed selecting proposals.

Raymo asked if the new website would be for the new program. Larsen replied that the website would be completely new and continue to the new program. He commented that a review group would be needed for the site when it is ready.

8. Status of establishment of new SAS structure

8.1. Any revisions to beta SAS Terms of Reference

Larsen went over the ToR change request that was circulating among SASEC before the meeting.

1. PEP Section 2.3 – Replace original text, “Those proposals sent for external review will also be sent for simultaneous review by the Technology Panel (TP), Site Characterization Panel (SCP), and Environmental Protection and Safety Panel (EPSP), and to the relevant IO for operator feasibility analyses.” with “Those proposals sent for external review will also be sent for simultaneous review by Site Characterization Panel (SCP) and to the relevant IO for operator feasibility analyses”.

The original wording calls for an unnecessary increase in the proposal review process by TP and EPSP. TP should only assess scientific measurement plans, technology/engineering plans, and third party tool plans as requested by PEP. TP's function in this stage is already written in TP's mandate section, which is “The TP shall advise PEP on the feasibility of the measurements and technological plans for all full proposals submitted for external review.” EPSP's function in this stage can be written like the following.

2. EPSP section 2 -- Replace original text “ The EPSP shall independently examine and review each proposed site, including site survey data and operational plans to determine if and how drilling operations can be conducted to maximize safety and minimize

environment impact." with "The EPSP shall independently examine and review each site of OTF-stage proposal, including site survey data and operational plans to determine if and how drilling operations can be conducted to maximize safety and minimize environment impact. The EPSP also previews sites of PEP-stage proposal as needed."

Becker commented that TP's and EPSP's function was written based on Triennium Review Committee report, which has the philosophy that we do not want any surprises on technology or safety after a proposal goes up to OTF. Therefore TP and EPSP should be involved at early stage. Yeats and Filippelli agreed with Becker. Larsen agreed on TP but not on EPSP. He commented that EPSP can be kicked in later because there is no reason they should start spending time before it's getting ready for OTF and site survey data. If SASEC prefers having TP and EPSP to review every proposal that go to external review, they can remain as they are written in the current ToR and SIPCom will see how it works and change the ToR. Filippelli commented that there were a few cases where EPSP was helpful at early stage, like Santa Barbara Basin proposal. Larsen commented that it would be PEP who flag which proposal needs EPSP pre-review. Becker commented that he was reasonably sympathetic to the change in point number 2 and take EPSP out of the initial list in that sense. Larsen clarified that proposal submits to TP not for the complete review of the proposal but for the feasibility of the measurements.

3. TP Section 1 – Replace original text, "The Technology Panel (TP) reports to the CMO and advises PEP and OTF", with "The Technology Panel (TP) reports to the CMO and advises PEP. The TP may communicate directly with IOs and other panels and with SIPCom in matters directly involving data and publications policies or other policy issues."

There are many cases in which the TP may need to communicate directly to the IOs, as well as the CMO, for efficient exchange of information. The need to communicate directly with OTF seems unrealistic.

4. TP Section 2 – Replace original text, "Specific responsibilities for the panel shall be advice on databases, sample handling, curation, shipboard equipment usage and needs, as well as borehole and observatory measurements, equipment, usage, and needs. In addition, TP will conduct QA/QC reviews of data collected on IODP platforms to ensure consistent

high quality data across the program”, with “Specific responsibilities for the panel shall be to advise on databases, sample handling, curation, shipboard equipment usage and needs, as well as borehole and observatory measurements, equipment, usage, and needs. In addition, TP will conduct QA/QC reviews of data collected on IODP platforms to ensure consistent high quality data across the program. The panel will also advise on publications policies and procedures and provide feedback to the IOs with respect to publications questions.”

5. OTF: SCP Chair not member

Johnson explained that STP requested to add the last sentence of 4, which were discussed at their last meeting. Becker commented that the publication issues was removed from STP and resided at the executive committee ever since. Larsen replied it’s true if the publication is important enough to influence program plan, but it’s not true if it is more related to daily business or technology. Clement and Humphris commented that they agreed that it fits in TP’s ToR.

Larsen asked if SASEC grants TP the name STP. No one opposed.

8.2. Schedule of new panel meetings.

Larsen showed the schedule of new panel meetings.

Panel	Date	Place
SASEC	14-15 June, 2011	Amsterdam, Netherland
STP	18 July -5 August, 2011	Teleconference
SSP	1-3 August, 2011	Florida, USA
SPC	22-24 August, 2011	Sendai, Japan
PEP	30 Nov.- 3 Dec., 2011	Western US
SIPCOM	Late January, 2012	Goa, India
SIPCOM	June 2012?	US?

Mével pointed out that SIPCOM has two meetings although their ToR mentions they have an annual meeting. Larsen explained that the first SIPCOM meeting would be a kick-off meeting to discuss and decide urgent issues for the new system launch. The second SIPCom

meeting would be their first regular meeting.

Mével asked when the date for the first PEP meeting would be decided. Larsen replied that it would be after PEP chair and members were selected. Schuffert asked the reason for the timing of PEP meeting and, concerned that if the people attend both of PEP and AGU, the current plan keeps them away from home for 2 weeks, which is not a good idea for this timing of year. Larsen replied that because the regular date before Thanksgiving conflicts with the NSF fall Ocean Sciences panel meeting, and PEP needs liaisons from NSF. Therefore it has been set to after Thanksgiving and before AGU. Raymo suggested two weeks before Thanksgiving. Larsen replied that it could not give enough time for management to process proposals for the meeting because 1st October proposal deadline is fixed and already announced, and also the new PDB (proposal database) is under development and will not be able to start accepting proposals until September.

Kawahara commented that the timing of SIPCom meeting would not be the best timing because Japanese members would not be available mid-late January due to Master and Doctor thesis defenses. Larsen replied that IWG+ could change the timing.

8.3. Selection of new panel chairs and members

Larsen went over the national balance of new SAS member population.

Population of SAS		NEW SAS						
		SIPCOM	PEP	TP	SCP	EPSP	EDP ?	TOTAL; observers excluded
USA		5	10	5	5	7	0	32

JAPAN	5	10	5	5	7	0	32
ECORD	4	8	4	4	4	0	24
Associate Members	1	0	0	0	0	0	1
PEP chair	1	0	0	0	0	0	1
ANZIC	0	1	1	1	0	0	3
KOREA	0	1	1	1			3
CHINA	0	1	1	1			3
INDIA	0	1	1	1		0	3
TOTAL	16	32	18	18	18	0	102

The members of SIPCom and PEP Chair Selection Committee are Ian Macgregor, Geoff Garrett, Masaru Kono, Gerold Wefer and Terry Quinn. The final selection for SIPCom chair will be submitted to IODP-MI by mid-June and selection for the PEP will be submitted by mid July.

Yeats commented that it was not clear how the membership was decided without involving the SIPCom members and how the associate members would be treated under one category despite their disparate contributions. Mével replied that IWG+ has decided the national balance showed in table above. Raymo suggested giving one vote for every associate member. Larsen replied that it is up to IWG+, but it is basically related to how much they pay. Yeats pointed out that ANZIC contributes 1.7 million a year but the other associate members put only a million dollars, however they get exactly the same representation of rights as ANZIC does on the panels. Larsen replied that the IWG+ chairs could consider these issues.

Humphris pointed out that there was no female candidate and suggested encouraging women into the program. Raymo asked if there is some central mechanism to make sure the balance of specialty and experience in gender and other things. Larsen replied that IODP-MI could look into that issue after PMO's selecting members. Schuffert commented that PMOs are careful about the balance when they nominate the candidates.

8.4. Interactions between OTF and SIPCOM, SIPCOM and PGB/CMO

Raymo suggested having SIPCom chair as an OTF member. She explained that her suggestion was based on the fact that the current SASEC does not have a chance to know the details of the science or other factors, and they just sit down to rubber stamp what they heard. Mével and Yeats agreed with Raymo. Humphris commented that she did not see any downside at all in adding SIPCom chair to OTF member, in which SIPCom chair will get more information as to why the decision was made in the way it was. Larsen commented that it would be a little bit strange to have SIPCom chair at OTF that advise SIPCom later. de Leeuw agreed with Larsen in terms of formality, but he more agreed with Raymo in terms of efficiency. Mével commented that OTF does not report to SIPCom but it works with SIPCom to develop a program.

Raymo asked if anyone opposed to having SIPCom chair as OTF member. No one opposed.

Becker noted that the change should be made in ToR of OTF and SIPCom. Yeats suggested recommending to IWG+ because the ToR of OTF is now outside of the governing of SASEC.

SASEC Consensus 1106-11: SASEC recommends to IWG+ that the SIPCOM chair also be a member of OTF within the new SAS structure and that the TORs be modified accordingly.

Wednesday	15 June 2011	08:30-17:15
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9. Engineering Development/transfer within new program

Becker reminded the floor of the purpose of EAG (Engineering advisory group) subcommittee, which was declared in SASEC consensus 1101-13.

SASEC Consensus 1101-13: SASEC forms a subcommittee to assess structural models in the post-2013 IODP for (a) advising on engineering development and industry-IODP technology transfer, and (b) ensuring adequate long-term engineering advice to the new SAS. The

subcommittee should consult with the IODP agencies, CMO, and IO's and provide its report at the June 2011 SASEC meeting. Subcommittee members include Keir Becker, Shoji Arai, Damon Teagle, and Susan Humphris.

He listed the reason why the current EDP model is considered not to fit in the new system.

1. During early ODP, when ED budget was good, the program (JOI, JOIDES, and ODP-TAMU) forged ahead with complex DCS in a way that was inconsistent with TEDCOM advice about ultimate cost - and failed.
2. This contributed to JOI formation of 1993-1994 Engineering Development Review Comm. to establish more rigorous ED process.
3. Tendency for technical panels to scrutinize IO operational engineering
4. Complexity of IODP structure, with CMO and 3 IO's
5. Potential mismatch between ambitious IODP goals and budgets
6. Dual nature of the mandate (operational advice to/from IOs vs long-term engineering development advice for entire program)

He summarized future potential ED group into the following four models.

1. EDP-like standing SAS panel (EP), perhaps smaller than regular panel
2. CMO-led task force with reps from IO's and SAS ("ETF" like OTF)
3. Separate IO task forces as planned by USIO
4. Periodic engineering DPG to update EDP road map ~ 3

Becker reported the opinion and preference of each concerned entity, and subcommittee's recommendation.

Model preference:

	1. Small EDP	2 IODP-MI ETF	3 IO TF's	4 ED-DPG
NSF/MEXT			✓	✓
IODP-MI		✓		
EMA/ESO*	✓		✓	
CDEX		✓	✓	
USIO			✓	

EDP	✓	✓	✓	
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Points of agreement in responses:

- Importance of engineering development to success of IODP.
- Collaboration with ED essential among all IODP entities.
- Distinction between operational engineering and long-term ED.
- IO task forces could achieve objectives related to operational engineering and provide scoping advice into SAS proposal evaluation process.

Issues raised in responses and/or subcommittee discussions:

- Importance of an independent perspective on engineering development.
- How to achieve program-wide vision/coordination, especially if there are three IO operational engineering task forces?
- Will multiple task forces stretch the ability of the community representation?
- How to achieve mandate (b) - good, independent long-term engineering advice to SAS?
- Budgets: Realistically, how much commingled funding will there be for ED via the CMO?
- Who will be actually implementing long-term engineering development? (IO's, contractors to CMO/IO's, third-party scientist/engineer groups?)
- For top-priority, major long-term engineering development, any of the standing-group models may not be adequate.
- Uncertainty about long-term future role of the CMO.

Subcommittee analysis:

- Perhaps a model with a single entity to satisfy all the technical/ED objectives might never work. Subcommittee suggests we will need a flexible approach tuned to needs/objectives (priorities) and budgets.
- IO task forces should be a good approach to achieving objectives related to operational engineering and provide scoping advice into SAS proposal evaluation process. Emphasize that there must be some sort of integrative coordination across IO task forces, to avoid duplication of effort and competing utilization of talent pool.
- Periodic ED-DPG's within SAS had little support - and the subcommittee concluded these are probably not a good way to achieve consistent long-term ED advice to SAS, so a different model is probably required to achieve mandate item (b).
- A CMO ETF or a small EP within SAS could provide program-wide vision/coordination, but could a CMO-led ETF realistically provide adequate, independent long-term ED advice to

SAS? (If CMO administers significant engineering development funding, a CMO ETF may be a reasonable option in advising on those specific efforts.)

- SAS should name a core group of engineering experts - here called an Engineering Advisory Group (EAG) - to be utilized in flexible ways to ensure long-term, independent ED advice to SAS and linkages to industry.

The subcommittee recommends that Engineering Advisory Group (EAG) Mandate covers the following points:

- Informing SAS of new technological developments from outside IODP, e.g., from industry.
- Providing SIPCom and PEP with an independent long-term perspective on feasibility of engineering development required to achieve high-priority IODP science objectives.
- Advising SIPCom and PEP in cases for which SIPCom/PEP are asked to prioritize individual technological developments for the program.
- At the request of PEP, reviewing technological feasibility of selected drilling proposals and nurturing them to facilitate their achievement.
- As needed, providing SAS and IODP scientists with independent technological assessments that may feed into discussions at OTF and ORTF.
- Recommending additional independent engineering experts when needed for especially complex engineering development.

EAG structure Aspect:

- EAG membership should be about half the size of normal panel. To the extent possible, the primary criteria for membership should be expertise and interest, with national or consortia entitlements a secondary criterion.
- EAG should not necessarily meet on a twice per year standard panel schedule, but should meet only when carefully justified.
- EAG should report formally to SIPCom, and therefore meet formally when agenda/justification is approved by SIPCom chair and CMO.
- EAG chair should attend SIPCom meetings.
- Potentially, EAG meetings could be coordinated with PEP or OTF if key engineering advice is required in scheduling process.
- For continuity, some EAG members should also serve as SAS reps on IO or CMO task forces.
- Some EAG members - plus additional experts suggested by EAG - could serve on project-

specific working groups/task forces for major, high-priority ED efforts, e.g., drilling technology for Mohole.

----- discussion

What EAG needs if it is formalized:

Janecek commented that the staffing should be done irrespective of national policy, but only based on what expertise is needed to get the best advice.

Teagle commented that what is needed is a name list of technology experts who are willing to provide advice to the project. Becker agreed with Teagle and the name list could be platform specific, and it could be used to select and add experts to EAG when they have a specific need.

Mével commented that EAG would be not necessarily be for engineering development. They can be people who know what exists and give advice on the existing technologies that are used in industry. Teagle and Yeats agree with Mével.

Possible difficulties from a call-up based EAG:

Mével pointed out that if they have regular meetings, it would be easier for them to come out, but if it's a meeting called as needed, it would be difficult to get permission from their companies.

Janecek pointed out the difficulty in justifying the need for EAG meeting and in staffing the group if it does not have regular meetings. Becker replied that CMO decides the need based on the priority SAS makes. Regarding staffing, the group is initially small and they add experts when they have a specific need.

Larsen pointed out the complicated process to make a contract with every extra member at every time of need. Mével commented that was the same as the current EDP members are concerned.

Positive comment for IO taskforce:

Janecek commented that one of the merits of having IO taskforce is that it is a long-term standing body.

Yeats commented that IO taskforce is practically helpful because what people need for JR and Chikyu are different. Especially Europe has a different issue in that they need advice not just on the equipment but also on the platform itself. IO taskforce could help for them. On the other hand, a group to provide integrated engineering advice could not work because there is no such a kind of solution anyway. Eguchi agreed with Yeats, and added that IO would be able to take EAG's advice because it does not fit IO's budgetary reality.

Janecek suggested having IO taskforce and see how it would work. If it will not work right, the panel could change the plan. He explained that it was not that he disagreed on need for long-term engineering advice for scientist, but starting with IO taskforce seemed safer at the moment.

What IO taskforce cannot cover:

Becker noted that the history showed that the engineering cost could be extremely high if it led by IO taskforce. That was one reason that the subcommittee suggested an independent group. Divins replied that that was 20 year ago. If USIO have a group of experts to come and sit with USIO staff to discuss what are the options for drilling, the cost problem would not happen again, and it also solves the problem that IO cannot afford EAG advice.

Filippelli commented that it would not be very practical for proponents and PEP chair to rely on the IO at PEP level, because they are not so ship-specific yet. Janecek replied that the people in IO taskforce would not be IO employees but they are just affiliated with IO and could provide independent advice. Filippelli asked to whom the PEP chair would send his request. Janecek replied it would be the IOs who have a meeting to determine the appropriate people on their taskforce. Filippelli replied that they would be ship-specific experts. Gatliff commented that it would be the best to have an independent engineering group to work with scientists at SIPCom and PEP.

Humphris commented that she would agree on having an IO task force, but she was concerned that there could be the case that people need cross-platform programmatic

engineering advice. If all the engineering advice is centered at the individual IOs, there would be nowhere people can get that information. Janecek replied that a periodic group who updates the engineering roadmap every few years could work. Larsen agreed with Humphris, and added that the funding agencies would not agree on channeling the limited resources for engineering into individual IO. Batiza replied that it could be the case. Larsen asked if IO taskforces could coordinate between IOs. Divins replied that they could have cross membership, but platform specific groups could work better.

Raymo summarized that IO would have their own taskforce anyway and there was no disagreement on it, and the decision awaiting a solution at this moment was how to formalize and staff the EAG. Yeats noted that SASEC did not need to agree to formalize EAG. He suggested having EAG as a virtual group that does not have a meeting schedule or structure, but IODP can call them EAG in order to secure their contract. He added that this model also fits the flexibility that Becker suggested is necessary.

Quinn commented that SASEC did not have enough time to discuss and find a perfect solution. So he suggested as a good enough solution that SASEC suggests having an independent, flexible consulting group for 18 months and see if it works. Janecek commented that there is no guarantee that such a group could provide solutions that panel and proponent need. Humphris suggested starting with IO task force and adding the EGU at some point later when they see what function is needed for areas that the IO task force cannot cover. de Leeuw and Filippelli agreed with Humphris.

SASEC Consensus 1106-12: SASEC thanks the Engineering Advice Subcommittee for its thoughtful assessment of models for engineering advice for the post-2013 IODP. SASEC endorses IO-based task forces for engineering advice for each platform, and recommends that there be close coordination amongst task forces. After much deliberation, SASEC concludes that an Engineering Advisory Group should not be created as part of the Science Advisory Structure at this time. SASEC encourages SIPCom to evaluate the efficiency and productivity of the IO-based taskforce arrangement for programmatic engineering advice and to reconsider the recommendations of this subcommittee in the future, as needed.

10. Workshops in FY2011-12: Budget and Process

Larsen introduced the workshop policy extracted from APP12.

With the new SAS and proposal process, the demand for WS will increase, in particular for WS aimed at producing full proposals. Similarly, it is envisaged that effective, long-term scheduling of platforms will require an improved mechanism to secure a critical mass of mature proposals in different oceans. Workshops with a regional inclination assist such a planning effort.

The program will therefore accept three types of WS proposals:

- 1) Unsolicited or solicited proposal that will address scientific opportunities in a particular region, with or without specific scientific theme(s) in mind,
- 2) Unsolicited WS proposals for thematic WS that has potential to develop new scientific approaches,
- 3) Solicited (by PEP) WS proposals to develop a full drilling proposal.

(1): The need for such regional WS may be significant. There is a growing concern about lack of a critical mass of proposals, making efficient scheduling difficult. Long-range planning, defining (tentative?) ship tracks and regional WS may be a path forward to overcome this quite fundamental problem.

(3): Solicited implies that a pre-proposal has been submitted and favorably reviewed by PEP, with review comments of a nature that will make it natural to further develop the scientific rationale, technology, or group of proponents through a WS.

Budget guidelines:

- (1) Up to 30K USD from IODP
- (2) Up to 25K USD from IODP

(3) Up to 15K USD from IODP

For FY12, a budget assuming two WS of type (1), two of type (2), and six of type (3) has been assumed. The latter is expected to cover around 50 percent of annual submissions of new proposals of high scientific quality.

Larsen summarized the current workshop proposal status.

#	Title	Proposed date	Requested\$	Granted\$
0	Gulf Of Lion Drillings	Oct, 2010	5000	5000
1	submarine mass movements and their consequences	Oct, 2011	10000	10000
2	Geological carbon capture & storage in mafic and ultramafic rocks	Jan, 2011	12000	12000
3	Continental transform boundaries: Tectonic evolution and Geohazards	Oct, 2011	26490	25000
4	Workshop to develop a conceptual framework for ocean drilling to unlock thesecrets of slow slip events	June 2011	41100	39000
5	Indian Ocean Drilling	Oct-Nov. 2011	35000	33000
6	Gulf of Lion Drilling	June, 2011	59000	Rejected
7	Gulf of Lion Drilling (revised)	Oct-Nov. 2011	42000	
8	Coordinated Scientific Drilling in the Canadian Beaufort Sea: Addressing Past,Present and Future Changes in Arctic Terrestrial and Marine Systems.	Jan-Feb, 2012	40500	

FY11 budget for workshop is \$180000. IODP-MI has already committed \$124000 to the workshops granted by SASEC at their last meetings. The remaining budget amount is \$56000.

Quinn made a presentation as the watchdog for the Canadian Beaufort Sea workshop proposal.

Workshop Title:

Coordinated Scientific Drilling in the Canadian Beaufort Sea: Addressing Past, Present and Future Changes in Arctic Terrestrial and Marine Systems

Objective:

Scientific drilling in the Canadian Beaufort Sea is required to

- 1) integrate modern observations within the broader context of past global climate change by acquiring longer-time and/or higher resolution paleoclimate records (enabling estimates of past sea-level trends, glacial dynamics, sea ice conditions and meltwater outflows),
- 2) constrain critical boundary conditions and process linkages associated with permafrost and gas hydrate aggradation and degradation on the shelf, and
- 3) to sample and instrument subsurface intervals to improve our understanding of the microbiology, chemical and physical processes of this unique environment

Anticipated Outcome:

A set of joint IODP/ICDP proposals that would address outstanding questions related to the glacial and paleoclimatic evolution of the Beaufort Sea region and, critically, how they are related to the development and future stability of the extensive terrestrial and marine permafrost and hydrate deposits

Previous Work/Background:

Pre-753 proposes to drill a transect of 3 sites in the Mackenzie Trough, with a focus on recovering late Quaternary high resolution terrestrial/marine paleoclimate time-series deposited in the upper, intermediate and deep waters of the Beaufort Sea. Another aim of Pre-753 is to define the late Quaternary glacial dynamics and sea- level history in the Canadian Beaufort Sea, which have direct bearing on models of permafrost and hydrate development. Pre-753 requires drilling in water depths of 100 to >650 m, and estimated penetration depths of 200-300 m

These scientific objectives have a clear overlap with a developing proposal (Paul et al.) to

investigate the onshore/offshore permafrost/hydrate system, and the dynamics of modern pingo-like features found across the Beaufort Shelf. Targeting existing hydrate and permafrost deposits on the Beaufort Shelf will require drilling in substantially shallower water depths, and to greater penetration depths of several hundreds of meters.

Proposed marine work builds upon Mallik gas hydrate research well program, an ICDP project in 2002 (Dallimore and Collett, 2005), which cored and instrumented three ~1150 deep research wells at a shoreline site at the edge of the Mackenzie Delta and the Beaufort Sea.

Logistics:

- The 3-day workshop will be limited to 100 participants
- Travel, accommodation and meal costs will be provided for 20 participants, including steering group members and approximately 10 early career scientists and keynote participants.
- The total cost of the workshop is therefore expected to be \$49500 CAD (!37554 EUR) IODP- Canada and ICDP-Canada will jointly contribute with an amount of \$10,000 CAD (!7568 EUR).
- Requesting \$39,500 CAD (!29,986 EUR) from IODP-MI to host this workshop

Watchdog's recommendation:

Quinn recommended this proposal because of high priority region for ocean drilling, reasonable mix of scientific expertise and experience and links to ICDP drilling community, although he pointed out that the objectives as stated are broad and need to be better focused.

-----discussion

Humphris pointed out that the proponents asked for IODP-MI's support only for 20 of 100 participants, and she asked how they would pay for the rest of the participants. Quinn replied that there was no description how they would do that. Teagle noted that this

workshop is a joint with ICDP.

Azuma commented that this workshop could be related to a commercial research because many companies now focus on particularly this area. Quinn agreed that there is a lot of interest from the industry in this region, but the proposal does not mention it. Kitazato commented that it could get some funding from companies. Quinn agreed with Kitazato but the proposal left that part unsaid.

Filippelli commented that this is a priority area and fits in well with the science plan. He asked how perfect workshop proposals should be before SASEC decides funding for it. Quinn replied the proposal might be too premature to get fully funded. He suggested funding half and encouraging them to seek other support from ECORD and ICDP and other possibilities and industry.

de Leeuw made a presentation as watchdog for the revised GOLD workshop proposal.

Abstract:

The "GOLD-1" IODP Project aims to study Global Climate Changes and Extreme Events, Margins formation, and the Deep Biosphere using a dedicated drilling Platform (Chikyu) in the Gulf of Lion. It is emphasized that no scientific drillings exist in the Mediterranean Sea that have reached successions pre-dating the Messinian salinity crisis (>5 Myr).

Status:

- Presently no mature or active drilling proposal for GOLD 1.
- Previous pre-proposals have been de-activated by SSEP.
- ESF Magellan Workshop 19-22 October 2010 (partly sponsored by ECORD and IODP) resulted in a proposal for a new IODP GOLD workshop to be held in October 2011, to meet the 1st call of the new drilling program.

Objective:

To (riser) drill one hole of 7.7 km depth on a unique and highly appropriate location in the Gulf of Lion to substantially contribute to our knowledge regarding Climate change, Co-evolution of Life and Planet, Deep Earth processes, Extreme events and natural Resources and Geohazards, all corresponding with the themes of the New Science Plan.

Proposed logistics:

2 Day meeting with ca. 40 excellent scientists and oil industry representatives, from relevant disciplines to discuss and amend a draft proposal for this ambitious program in October 2011 responding to the first call of the new drilling program.

Costs: 75.5 kUSD; Requested from IODP-MI 42 kUSD.

Watchdog's comment:

de Leeuw noted that the proponents improved the proposal well along the advice from the last SASEC January meeting. However, he concerned about the technological feasibility and long drilling time (500days). He recommended not funding this proposal at this stage, and seeing if it is possible to update the proposal and clear the technological problems with the result of the scoping study of the other similar drilling like BEAM.

-----discussion

Larsen asked de Leeuw what is the strongest theme in this WS proposal. de Leeuw replied that it was microbiology. Salts diapirs provide an extra dimension about deep microbial life. Filippelli commented that similar environments could be found somewhere else. It might not be so isolated. de Leeuw replied that it could be isolated under a combination of high pressure and high temperature. Larsen asked if their microbiology objective could be achieved only by ocean drilling, which is the most important parameter for an IODP proposal. de Leeuw replied that he was not sure, but it could be because sea water evaporation is the key for the environment.

Mével noted that what Chikyu could do and who decides what Chikyu would do were not clear yet. If this WS gets a green light, what would CDEX start scoping on? Even Mohole is not ready to go. de Leeuw commented that listing the Chikyu proposals to check what stage they are and to see whether this drilling fits in could be helpful.

Teagle commented that he heard Petrobras is interested in this drilling. Mével replied that she did not know about Petrobras, but she heard that there was a lot of interest from young companies on the Mediterranean itself. Kitazato commented that study of microbial life under such a very high saline water condition has been very popular in Europe nowadays. This could be very attractive not only to IODP community but also other microbiology community.

Humphris commented that she agreed with de Leeuw on the lack of technological discussion in the proposal. It is about 7.7 km riser hole after 2.4km water column which would be more ambitious than Mohole project, and yet the WS did not take into account the technological feasibility of this. She suggested bringing them along to look at more of the technology before IODP spends a lot of money on the workshop. Raymo and de Leeuw agreed with Humphris. Yeats suggested adding that they need to engage with the Beam working group. Mével commented that technology for drilling through salt dome already exists, not like BEAM which needs new technology. Humphris agreed with Mével.

Raymo commented that there seemed to be two options, funding one at full requested amount or neither.

Quinn noted that the additional strong points of Beaufort Sea proposal are cost-sharing between IODP-MI, IODP Canada and ICDP Canada, and the lead proponent is a young scientist who got his PhD in 2007. Raymo commented that the Beaufort Sea has more positive points than GOLD has.

Yeats commented that there needs to be a consistency with the future WS funding policy, and he suggested funding Beaufort Sea WS \$30K that the maximum amount in the FY12 WS policy. Raymo replied budget could change from year to year. Teagle added that fund would depend on the budget on the table that year. Humphris commented that she was for funding full requested amount as a consideration for the connection with ICDP. Teagle agreed with Humphris under the condition that they submit a formal application to ICDP. Filippelli commented that he also supports full requested funding because this WS has higher potential than even the others WS evaluated at the last meeting.

SASEC Consensus 1106-13: SASEC declines to recommend funding of GOLD workshop proposal.

SASEC Motion 1106-14: SASEC recommends that the Beaufort Sea Workshop proposal be funded at the requested amount.

Quinn moved, Teagle seconded; 10 in favor (Arai, Becker, de Leeuw, Humphris, Kato, Kitazato, Takahashi, Quinn, Raymo, Teagle); 2 non-voting (Filippelli, Suyehiro)

11. Linkages to scientific/national initiatives (PAGES, OOI, etc.)

This agenda item was merged with agenda item 12.

12. ICDP-IODP linkages update

Raymo informed that she was planning to attend the PAGES steering committee meeting next month and she would report on that. She asked if someone tapped into OOI or any other group including ICDP.

Quinn reported that he talked to Uli Harms of ICDP a couple of months ago and know they decided to have a top-level meeting with IODP. The IODP-ICDP linkage finally made concrete progress, as Filippelli presented in the SPC report at this meeting.

Arai commented that if we regard ICDP linkage as important, we should clearly state it. Filippelli replied that the proposal cover sheet has a check box for listing other programs that are connected to a proposal. de Leeuw commented that we should be careful about it because if we explicitly refer to ICDP, we have to refer to all of the other programs, but it can be addressed in FAQs. Filippelli suggested mentioning ICDP in the proposal primer as an example.

13. Review of action items, motions, and consensus statements in first half of SASEC meeting (for presentation to joint session)

Raymo showed the draft consensuses and suggested discussing on those consensuses after the joint session.

19. Review of any additional action items, motions, and consensus statements

Panel members walked through the draft of the consensuses, and discussed on their wording.

-- FY12 APP (Action Item 1106-04)

Raymo summarized the expected workflow, which is that Suyehiro will provide FY12 APP in early July. The budget subcommittee (Chair: Becker) will provide some recommendations to SASEC soon afterwards. And, SASEC will then forward its recommendation to NSF by July 15th. SASEC does not need to have a meeting for that.

-- SASEC review for the final MSP expeditions (Action Item 1106-3)

SASEC will review, advise, and approve SPC recommendations for the final MSP Baltic Sea versus Chicxulub, based on SPC recommendation.

Raymo asked Filippelli if SPC's recommendation would reflect scoping study with the IOs. Filippelli replied that it would not include IO's input. He planned to submit a detailed summary of SPC's discussions and decision. Raymo commented that SPC would be able to get information on cost issues only from the IOs. Filippelli replied that SPC would know it after the IO's meeting in September.

Raymo asked Filippelli when he could submit the report. Filippelli replied that it would be a week after August 25th or September 2nd something.

-- SASEC review for RRD

SASEC will review proposal for rapid response drilling expedition to Tohoku earthquake zone considered for endorsement and approval based on technological capability.

Filippelli commented that it could be duplicate efforts as SPC will review its science and some of the technological and timing issues as well. Raymo replied that SASEC should review SPC's recommendations, not proposal.

Filippelli commented that this review process is an exception in terms of no external review. Raymo suggested involving independent technological experts that can advise SPC. Teagle commented that involving experience and experts from NanTroSEIZE would be helpful. Filippelli replied that he would work with IODP-MI to involve some experts, and one or two of them could attend SPC meeting to provide feedback in person.

Humphris voiced her confusion about financial implication for RRD. RRD already has the window for drilling, which means money subtracted from other expeditions and moved to RRD. Becker commented that it would be explained in FY12 that would come later. Humphris replied that it couldn't be because SASEC will make the recommendation for RRD in September. It is more likely that IODP-MI comes back with a change about RDD in FY12APP after SASEC's recommendation. Becker replied that SASEC should request IODP-MI to provide budgetary clarification before SASEC's decision.

-- Next SASEC meeting

Raymo noted that email communication would be not effective for discussion on especially

RRD and MSP issues. She asked if there is room in the budget for a final SASEC meeting. Becker commented that he is not available on 16th September because he will leave for a cruise. Raymo suggested a teleconference. Larsen commented that it would be hard to engage Japanese colleagues in discussions over the phone. Raymo suggested an executive subcommittee to summarize and discuss the issues, and then ask the full SASEC members for final consensus by email. All agreed.

Date: 12 September

Venue: TBD (Seattle or somewhere on west coast)

Attendees: TBD (US:Japan:Europe:Associate= 2:2:1:1)

20. Closing Remarks, official disbanding of SASEC

De Leeuw thanked Raymo on behalf of all SASEC members for her excellent guidance as chair of SASEC over the last years. SASEC members realized that being chair(wo)man of SASEC has not been an easy job given the complexity of IODP structure and organization, the start of the transition period, the realization of the new science plan, etc.

Raymo thanked members for their effort and collaboration, and thanked the local host, de Leeuw.

Raymo adjourned the meeting at 17:40.

ADJOURN